A Guide to Some Common Plants of the Kamloops Region, British Columbia

Land Management
HANDBOOK NUMBER 3

ISSN 0229-1622

May 1981

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103-06781/

A Guide to Some Common Plants of the Kamloops Region, British Columbia

Compiled by
Karen Angove

FIRST DRAFT
MAY 1981

Province of British Columbia
Ministry of Forests

Sponsored by
Research Section
Kamloops Forest Region

Published by the
Information Services Branch
Ministry of Forests
Province of British Columbia
Victoria, B.C.
V8W 3E7

Canadian Cataloguing in Publication Data

Angove, Karen, 1951-
A guide to some common plants of the Kamloops Region, British Columbia

(Land management handbook, ISSN 0229-1622; no. 3)

A companion to identification and interpretation of ecosystems of the western Kamloops Forest Region by W.R. Mitchell.
Bibliography: p.
ISBN 0-7719-8614-9

1. Botany - British Columbia - Kamloops Forest Region. 2. Plants - Identification. I. British Columbia. Kamloops Forest Region. Research Section. II. Mitchell, W. R., 1929- . Identification and interpretation of ecosystems of the western Kamloops Forest Region. III. Title. IV. Series.

QK203.B7A53 581.9711'41 C81-092214-2

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ACKNOWLEDGEMENTS

I would like to acknowledge the help of the staff of the Research Branch in the Kamloops Forest Region; Terry MacIntosh and Trevor Goward, contract botanists with the Ministry of Forests; Robert Scagel, Ministry of Forests in Vancouver, for his technical advice and help with grass descriptions; Peggy Frank and Glynn Bishop for drawings and tree silhouettes; and Kathy Doyle for typing the manual.

The drawings orginate from a variety of sources. The abbreviation given below for each source will appear beneath each drawing.

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2. Schof. Schofield, W.B. 1969. Some Common Mosses of British Columbia. B.C.P.M. Handbook Series No. 28.

3. Szcz. Szczawinski, A.F. 1975. The Heather Family of British Columbia. B.C.P.M. Handbook Series No. 19.

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The plant descriptions have been compiled from a variety of sources which are listed in the bibliography.

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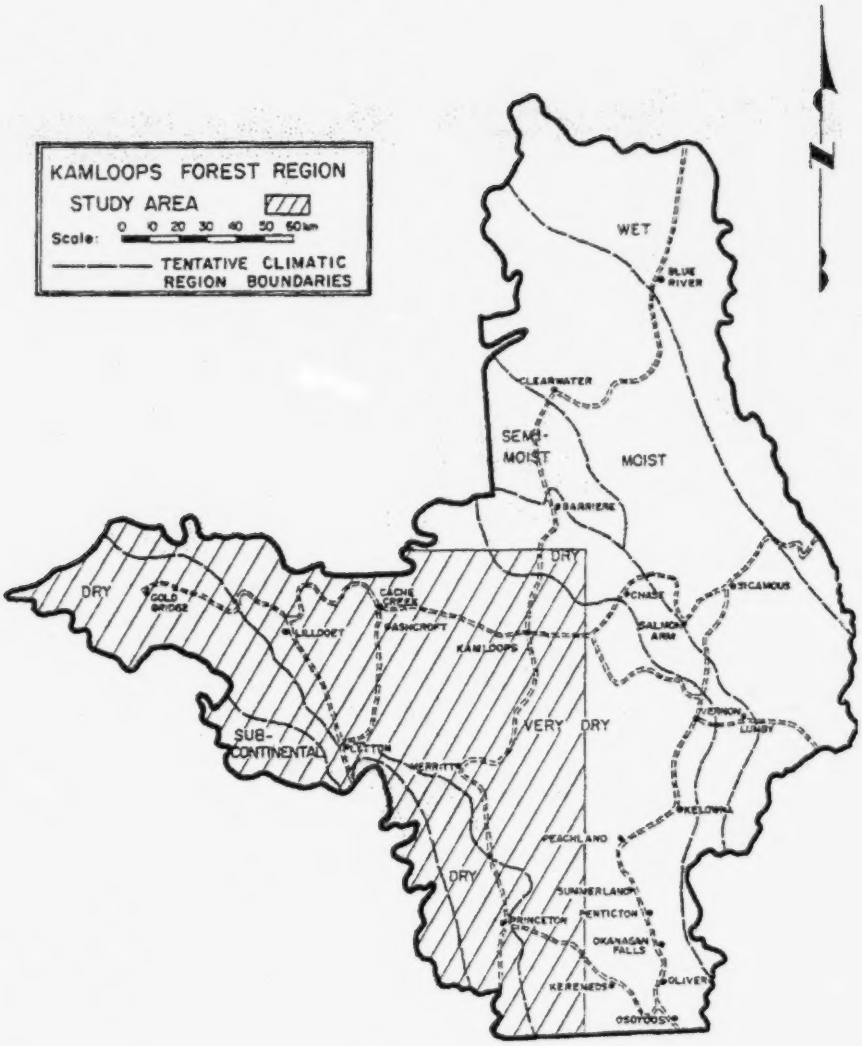

KAMLOOPS FOREST REGION
STUDY AREA
Scale: 0 10 20 30 40 50 60km
TENTATIVE CLIMATIC REGION BOUNDARIES
WET
BLUE RIVER
CLEARWATER
SEMI-MOIST
MOIST
BARRIERE
DRY
DRY
GOLD BRIDGE
LILLOOET
CACHE CREEK
ASHCROFT
KAMLOOPS
CHASE
SALMON ARM
SICAMOUS
VERY DRY
SUB-CONTINENTAL
MERRITT
VERNON
LUMBY
KELOWNA
PEACHLAND
DRY
SUMMERLAND
PENTICTON
PRINCETON
OKANAGAN FALLS
KEREMEOS
OLIVER
OSOYOOS

INTRODUCTION

PURPOSE

The purpose of this guide is to provide a simplified list and description of common plants, including bryophytes and lichens, which occur in the Kamloops Forest Region. It is intended to accompany the "Field Guide for the Identification and Interpretation of Ecosystems of the Western Kamloops Forest Region", to aid in the identification of plants listed in the characteristic combination of species provided for each ecosystem association and phase.

SCOPE AND LIMITATIONS

This guide includes over 300 plant species which occur in the western part of the Kamloops Region. It is intended for the use of those people not familiar with botanical jargon, therefore, technical terms were eliminated where possible. A glossary is included to explain any technical terms which were used. This guide is just a tool to use in species identification and should not be used as a final authority in cases of uncertainty. In such cases, specimens should be collected, pressed, and brought in to the Kamloops Regional Forestry Headquarters to be identified.

The guide is organized in order of canopy layers, i.e. trees (A layer), shrubs (B layer), herbaceous plants (C layer), bryophytes and lichens (D layer). In the above mentioned "Field Guide for the Identification and Interpretation of Ecosystems of the Western Kamloops Forest Region", some low shrubs are included in the C layer. A list of these exceptions may be found in Appendix II, however, in this guide all true shrubs will be found in the shrub section. The herbaceous plants are arranged in alphabetical order of the latin family names. Species within each family are arranged alphabetically according to their latin name. The group "Other Herbaceous Plants" consists of species not found in the most common plant families.

For each species there is a diagram, a general habit description and a description of leaves, flowers, fruit and general habitat. At a later date the habitat descriptions will be made more specific for the Kamloops Region.

Nomenclature follows that of Taylor and MacBryde (1977) for vascular plants; Crum, Steere and Anderson (1973) for mosses; Stotler and Crandell-Stotler (1977) for liverworts and Hale and Culberson (1970) for lichens. Common names follow those used by Taylor and MacBryde (1977).

This copy is a FIRST draft. Any comments and criticisms will be greatly appreciated.

TREES

Abies amabilis (Pacific silver fir)

TREE - up to 50-70 m tall.

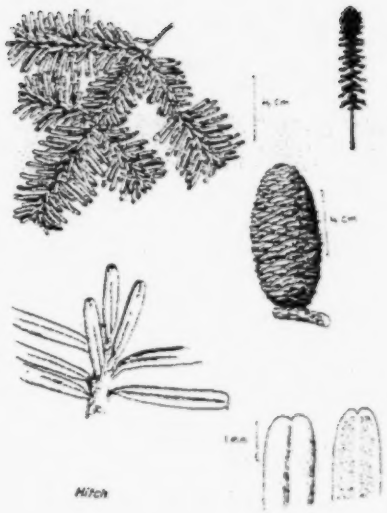
BRANCHES - flattened, spray-like

LEAVES - shiny, dark green above, two silvery bands of stomata below, nearly flat: mostly notched, needles spreading horizontally or somewhat erect to pressed to upper side of branches and pointing forward; needles relatively long and broad on cone bearing branches: upper needles strongly appressed mostly parallel to twig due to twisted needle base.

CONES - erect, usually near top of trees.

HABITAT - found mainly in coastal forests on a variety of soils: occasionally in pure stands, usually mixed with other species of conifers.

Family: PINACEAE



Abies lasiocarpa (Subalpine fir)

TREE - rarely over 30 m tall.

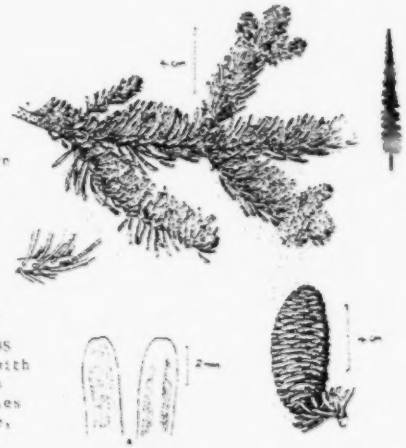
BRANCHES - not spray-like.

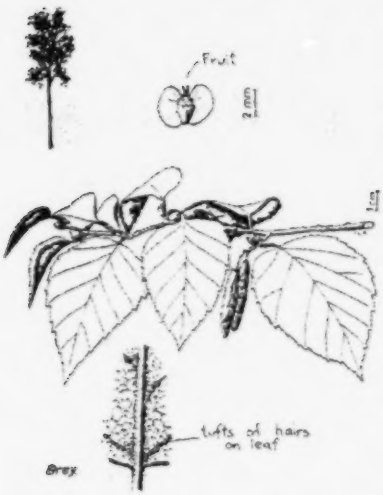
LEAVES - bluish-green, mostly blunt, sometimes notched, all tending to turn upwards, all having stomata on both surfaces, leaves stalkless: needles relatively short and narrow on cone bearing branches only: needle bases not twisted.

CONES - usually near top of tree, erect, similar to *Abies amabilis*.

HABITAT - a typical species of the SBS and ESSF zones, grows best on soils with some seepage: may grow in pure stands but is usually mixed with other species of conifers. Common in the subalpine, however, occurs at low elevations in more continental climates.

Family: PINACEAE





Betula papyrifera (Common paper birch)

TREE - up to 30 m tall.

BARK - readily to tardily peeling, white smooth and marked with brown horizontally elongated lenticels, to copper-brown.

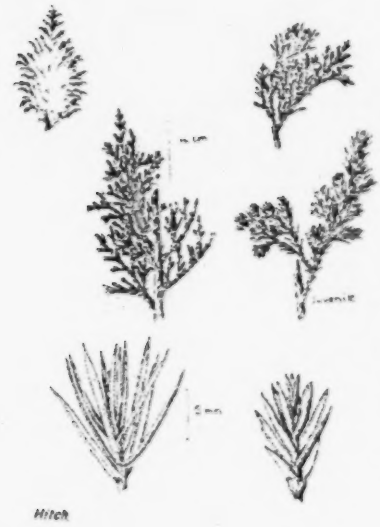
LEAVES - narrowly egg-shaped to nearly round, sharp-pointed, serrate, usually 15-20 teeth per side, sometimes very shallowly lobed; upper surface greener than lower surface, smooth to hairy, lower surface usually hairy with hairs tufted in axils of larger lateral veins toward base of leaf.

FRUIT - nutlet having wing broader than body.

HABITAT - grows best on well-drained sandy or silty loams where abundant moisture is available, thrives on burned-over and cut-over areas where it often forms pure stands, later becoming restricted to openings as the forest matures.

NOTE: When young this species is confused with *Corylus cornuta*.

Family: BETULACEAE



Juniperus scopulorum (Rocky Mountain juniper)

TREE - small, up to 10 m tall, more commonly a sprawling shrub.

LEAVES - scale-like leaves; juvenile leaves are needle-like. Similar to *J. communis*.

FRUIT - Cones; female cones are berry-like, bluish-purple, more glaucous than *J. communis*.

HABITAT - more restricted to the interior; commonly found on dry rocky or sandy soils.

Family: CUPRESSACEAE

TREES

Larix lyallii (Alpine larch)

TREE - small tree 10 to 20 m tall.

BRANCHES - irregularly spaced, gnarled; branchlets are stout, densely hairy and have spur shoots.

LEAVES - deciduous; needles 4-sided in cross section; 2.5 to 3.5 cm long, 30 to 40 needles/spur shoot.

CONES - 3.5 to 4.5 cm long, oval when closed somewhat parallel when open; appear spiny because bracts protrude beyond cone scales.

HABITAT - in ESSF parkland and alpine zone, commonly on rocky and gravelly soils.

Family: PINACEAE

Larix occidentalis (Western larch)

TREES - up to 30 to 45 m tall.

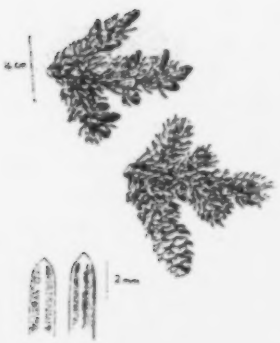
BRANCHES - have characteristic spur-shoots (dwarf twigs).

LEAVES - deciduous; needles, pale yellow-green, 3-sided in cross section, in clusters of 15 to 30 on spur shoot.

CONES - female cones oval when closed, egg-shaped when open; 2.5 to 4 cm long; bracts with long slender tip extending beyond scales.

HABITAT - in altitudes between 420-1200 m best growth on deep, porous, moist soils; often mixed with other species.

Family: PINACEAE



Mitch

Picea glauca (white spruce)

TREE - stunted to erect, up to 25 m tall.

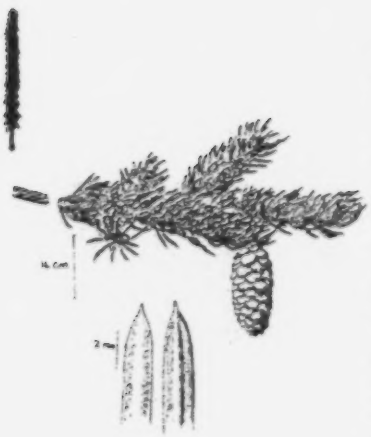
BRANCHES - young twigs smooth and shiny, not hairy.

LEAVES - 4-sided, tending to project from all sides of the branches, somewhat sharply pointed, aromatic when crushed.

CONES - scales rounded to blunt at tip and stiffer than those of *P. engelmannii* cones; 2.5 - 3.5 cm long. Cone scale a fingernail-like, short free scale.

HABITAT - swamps and river banks to 1500 m; grows best on well-drained, moist silty soils. In our region it is mostly hybridized with *Picea engelmannii*.

Family: PINACEAE



Mitch

Picea engelmannii (Engelmann spruce)

TREE - straight, spire-like, up to 50 m tall.

BRANCHES - young twigs hairy, occasionally glabrous.

LEAVES - sharp but not particularly stiff, all on upper side of branch, malodorous, right-angled, two whitish lines on upper and lower surfaces.

CONES - scales blunt to sharp-pointed, finely irregular margined wavy; cones 4-5 cm long.

HABITAT - characteristically a subalpine species occurring between 1000 and 2000 m grows best on deep, rich, moist loamy soils; commonly hybridizes with white spruce.

Family: PINACEAE

TREES

Picea mariana (Black spruce)

TREE - up to 20 m tall.

BRANCHES - dead or over-mature trees often have dense clusters of branchlets near top; young twigs hairy and glandular.

LEAVES - 4-angled, standing out on all sides or mostly pointed upwards, stomata present on all sides.

CONES - female cones persistent, scales irregularly toothed, broadly rounded at tip; 1.5 - 3.0 cm long.

HABITAT - wet meadows; characteristic tree of poorly drained sites. In bogs and upland sites near bogs.

Family: PINACEAE

Pinus albicaulis (Whitebark pine)

TREE - usually dwarfed, 5 to 15 m tall, often reduced to a shrub in exposed areas.

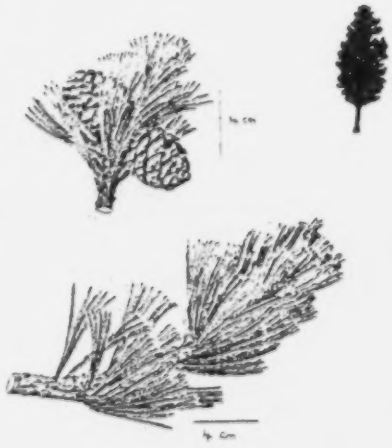
BRANCHES - usually ascending; young twigs pubescent.

LEAVES - needles 4 to 7 cm long, in bundles of 5; bluish-green, stiff and slightly curved; clustered towards the ends of branchlets.

CONES - egg-shaped to globular, 5 to 8 cm long; disintegrates when mature; has scales with blunt triangular tips but no prickles.

HABITAT - alpine, rarely grows below 1500 m; grows on exposed slopes and rocky ridges near upper tree line.

Family: PINACEAE



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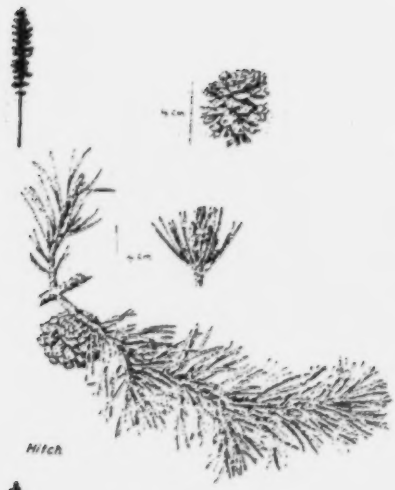


Pinus contorta var. *latifolia*
(Lodgepole pine)

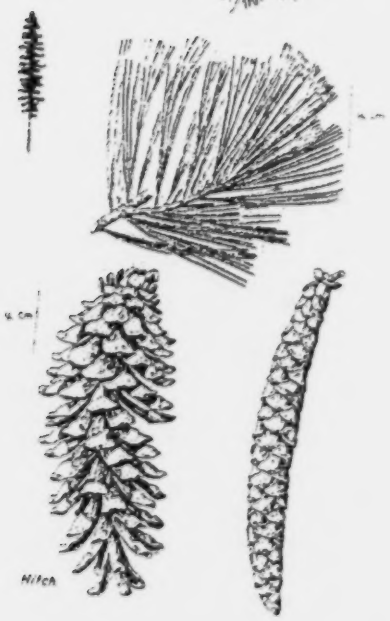
TREE - mostly 20 to 35 m tall.

LEAVES - needles in bundles of 2 with persistent basal sheath 2 to 7 cm long, often spirally twisted; stiff, very sharp pointed; dark green to yellowish-green

CONES - serotinous; variable in shape from short-cylindrical to egg-shaped, 2 to 5 cm long without stalks; scales thickened at tips, bearing curved prickles that may be shed.

HABITAT - grows on a wide variety of sites best growth on well-drained loams; esrablishes readily after fires.

Family: PINACEAE



Pinus monticola (Western white pine)

TREE - usually up to 30 m tall.

BRANCHES - horizontal, conspicuously whorled.

LEAVES - needles in bundles of 5; slender 5 to 10 cm long, soft to touch, small teeth on margins of needles.

CONES - cylindrical when closed, pendant 15 to 25 cm long; scales thin, broadening upwards, deep red to chocolate-brown below the usually yellowish-brown tip; no prickles.

HABITAT - thrives on a variety of soils from bogs to dry sandy soils; best growth on fertile well-drained soils in moist valleys.

NOTE: Can be confused with *Pinus albicaulis* at higher elevations except *Pinus albicaulis* does not have teeth on needles.

Family: PINACEAE

TREES

Pinus ponderosa
(Ponderosa pine, Yellow pine)

TREE - usually up to 25 to 30 m tall, with peculiar "jig-saw puzzle" bark.

BRANCHES - usually short and stout on mature trees.

LEAVES - usually in bundles of 3; 12 to 20 cm long, in clusters towards the ends of branches; dark yellowish-green.

CONES - cylindrical to narrowly oval when closed, 8 to 14 cm long; scales thickened at tips bearing sharp prickles.

HABITAT - grows on a wide variety of soils from extremely dry to well-drained relatively deep moist soils. Often in pure stands at 300 m, will grow with other species up to 1200 m.

Family: PINACEAE

Populus tremuloides (Trembling aspen)

TREE - up to 25 m tall, tends to multiply by growth of suckers from extensive shallow root system.

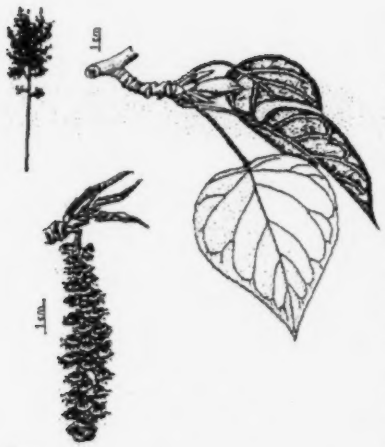
BARK - white turning blackish and somewhat roughened at base of tree with age.

LEAVES - egg-shaped to nearly circular, rounded to square-cut at base, sharp-pointed at tip, paler beneath, margins round-toothed; petiole laterally flattened, 2/3 as long as blade allowing the leaf to tremble in the slightest breeze; without glands.

BUDS - not resinous or fragrant.

HABITAT - tolerates a wide range of conditions, best growth on well drained, moist alluvial soils, will not grow in saturated soils.

Family: SALICACEAE



Bray

Populus balsamifera ssp. *trichocarpa*
(Black cottonwood)

TREE - up to 40 m tall.

BARK - old bark deeply furrowed, dark gray.

LEAVES - egg-shaped, rounded to heart-shaped at base, sharp-pointed at tip, pale and often stained with patches of brown resin beneath margin finely round-toothed; petiole 1/3.1/2 as long as blade, cylindrical, often with a pair of glands at the junction with the blade; leaf not fluttering in light breeze.

BUDS - very resinous and fragrant.

HABITAT - occurs mostly on loose, porous, sandy or gravelly soils of low-lying damp areas; also occurs to mid-slope position on seep sites.

Family: SALICACEAE

Hitch

Pseudotsuga menziesii (Douglas-fir)

TREE - up to 42 m in the interior.

BRANCHES - buds sharp pointed, shiny reddish-brown; branches horizontal or ascending when young, drooping with age.

LEAVES - flat, linear needles, not as pointed as *Picea* needle tips, bases narrowed into a short petiole; bluish-green upper surface, two stomatal bands on lower surface.

CONES - narrowly oval, 5 to 11 cm long with prominent 3-pronged bracts protruding beyond the rounded scales.

HABITAT - thrives on a variety of soils, best growth on deep well-drained sandy loams in moist climatic regions.

Family: PINACEAE

TREES

Taxus brevifolia (Pacific yew)

TREE - short, often shrub-like, 5 to 10 m tall; trunk often twisted and fluted.

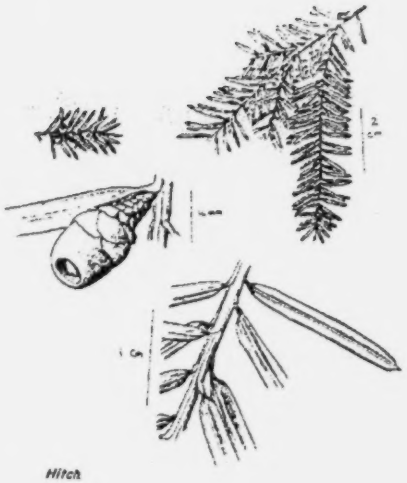
BRANCHES - slender, horizontally spreading with flat or slightly drooping branchlets.

LEAVES - needle-like, dark-green above, light green below; spirally arranged with twisted leaf stalks to appear two-ranked; abruptly sharp pointed.

FRUIT - female, a single seed covered by a red fleshy body.

HABITAT - thrives in the understory of larger coniferous trees, in the Kamloops Region it occurs primarily in the ICH zone.

Family: TAXACEAE



Thuja plicata (Western red cedar)

LARGE TREE - up to 70 m tall.

BRANCHES - tending to spread or droop slightly and then upturn; branchlets spray like, strongly flattened tending to be positioned horizontally.

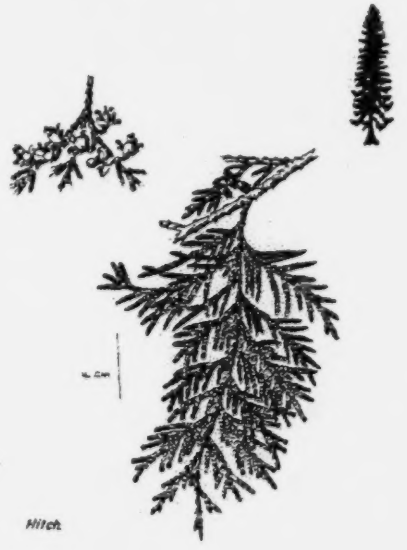
BARK - tearing off in long thin strips, reddish brown.

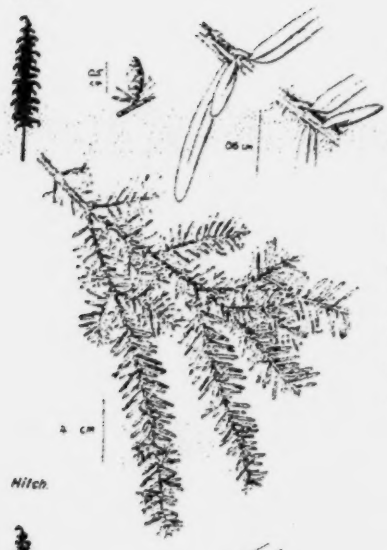
LEAVES - at first lustrous or somewhat yellowish-green, becoming brown and largely deciduous in 3-4 years, partly overlapping in shingled arrangement.

CONES - female cones egg-shaped, 8-10 mm long.

HABITAT - grows best in seepage and alluvial sites. Occurs commonly throughout the ICH zone and in nutrient rich sites in the IDF zone.

Family: CUPRESSACEAE





Tsuga heterophylla (Western hemlock)

TREE 30 - 50 m tall, drooping leader.

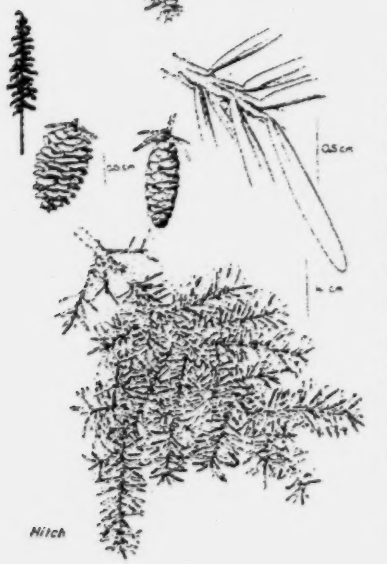
LEAVES - glossy and yellow-green on upper surface, white over most of lower surfaces, markedly unequal in length, usually at right angles to branches to form flat sprays.

BRANCHES - mostly drooping.

CONES - female cones egg-shaped, 1.5 - 2.5 cm in length.

HABITAT - Adapted to grow well on raw humus and on decaying wood, very shade tolerant.

Family: PINACEAE



Tsuga mertensiana (Mountain hemlock)

TREE - subalpine, erect, rarely 30 - 40 m tall, often stunted at higher elevations; leader only slightly drooping

LEAVES - covered equally by stomata on upper and lower surfaces; needles covering branches on all sides.

BRANCHES - mostly drooping.

CONES - female cones, 3-6 cm in length.

HABITAT - subalpine to timberline; adapted for short vegetative seasons of subalpine climates; frequently found in low elevation bogs under influence of coastal climates.

NOTE: The cones of *Tsuga heterophylla* are much shorter than those of *T. mertensiana*.

Family: PINACEAE

SHRUBS

Acer glabrum var. *douglasii*
(Douglas maple)

SHRUB TO SMALL TREE - 1-10 m tall, bark grayish to reddish.

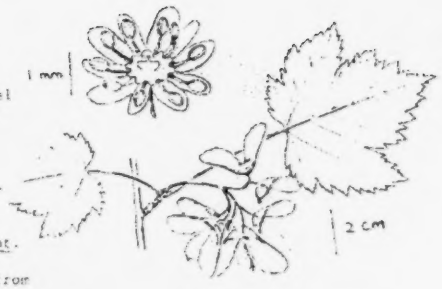
LEAVES - palmately 3-5 lobed, typical "maple-leaf" shape, coarsely twice-serrate, paler below.

FLOWERS - in axillary clusters, appearing with the leaves, greenish-yellow in colour, imperfect.

FRUIT - samaras not greatly divergent.

HABITAT - mostly east of Cascades: from lowland to moderate elevations.

Family: ACERACEAE



Hitch

Alnus incana ssp. *tenuifolia*
(Mountain alder)

SHRUB - or small tree, up to 12 m tall.

BRANCHES - twigs glabrous to wooly hairy.

LEAVES - broadly elliptic, rounded to somewhat heart-shaped at base, rounded to blunt at tip; shallowly lobed, doubly toothed; upper surface green, lower surface pale, usually abundantly hairy at least along veins; secondary veins have laddered appearance; petioles hairy. Young leaves not sticky. Buds short stalked and club-shaped.

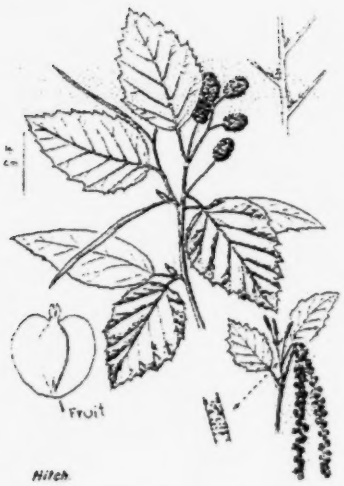
CATKINS - produced on growth of previous season.

FRUIT - nutlet without membranous wing.

HABITAT - mostly along streams or at edge of ponds or lakes, in alluvial and other moist soils. Absent from coastal zones.

Family: BETULACEAE

Bray



Hitch

Alnus viridis (American green alder)

SHRUB - or, rarely, small trees up to 8 m tall.

BRANCHES - twigs hairless to finely hairy, smooth; reddish brown.

LEAVES - egg-shaped to elliptic, sharp-pointed at tip; finely double toothed, often shallowly lobed, leaves yellowish-green on both sides, usually shiny and smooth above, hairy in vein axils below, secondary veins do not have laddered appearance, petioles usually glabrous. Young leaves sticky beneath, buds sessile and pointed.

CATKINS - arising from buds of the current season.

FRUIT - nutlet with wings.

HABITAT - well-drained upland areas, on glacial moraines, often forming thickets near upper timberline in mountains.

NOTE: *Alnus viridis* is made up of two subspecies. *Alnus viridis* ssp. *sinuata* (Sitka mountain alder) and *Alnus viridis* ssp. *fruticosa* (American green alder). The differences resulting in the separation are that *A. viridis* ssp. *fruticosa*, which is more common in coastal northern British Columbia, is a coarse shrub or small tree and has leaf margins which are shallowly lobed as well as doubly toothed, whereas *A. viridis* ssp. *fruticosa*, which is more common in the interior of northern British Columbia, has leaf margins not at all, or only slightly lobed, merely double toothed and is almost always a shrub.

Family: BETULACEAE

SHRUBS

Amelanchier alnifolia
(Serviceberry, Saskatoon)

SHRUB TO SMALL TREE - to 7 m tall; stem smooth, with dark grey to reddish bark.

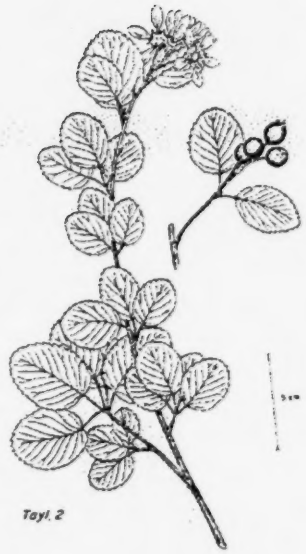
LEAVES - round with margins serrated on top half mostly.

FLOWERS - white, abundant, in a short leafy cluster, usually 3-20.

FRUIT - berry-like, purple to nearly black with a white bloom; edible, sweet.

HABITAT - moist or dry forest and open hillsides in well drained soils Found in both coastal and interior locations.

Family: ROSACEAE



Tayl. 2

Arctostaphylos uva-ursi
(Kinnikinnick)

SHRUB - evergreen trailing, often forming mats with long flexible rooting branches.

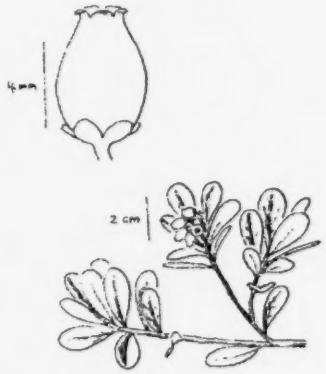
LEAVES - oval to spatula shaped, leathery, entire dark green, somewhat shiny above, paler beneath, to 0.24 cm long; used as a tobacco substitute in past.

FLOWERS - in a dense terminal cluster, urn-shaped, white or tinged with pink.

FRUIT - bright red berry resembling miniature apple with mealy and rather tasteless pulp; edible.

HABITAT - on exposed and well drained sites, province wide.

Family: ERICACEAE



Hitch

SHRUBS

Hitch

Artemisia frigida (Prairie sagebrush)

SHRUB - perennial, 10 - 40 cm tall with stout stem base, woody crown, often mat forming.

LEAVES - clustered at base and well distributed along stem, soft and finely hairy, divided into 2 or 3 thin fringe-like leaflets, silvery, olive-grey coloured, with "sage" smell when crushed.

FLOWERS- small, dull inconspicuous, yellow, and clustered along the flowering twigs; flowers in late summer.

HABITAT - dry open slopes to about 1000 m in the mountains. Most common in range areas, especially in dry upland grasslands and PPBG zones.

Family: ASTERACEAE

Hitch

Artemisia tridentata (Big basin sagebrush)

SHRUB - gnarled grey-green, up to 2 m tall.

LEAVES - are thin and triple or double notched, persist through winter, have characteristic "sage" smell.

FLOWERS- drab, yellow in a loose panicle, appear in late summer.

HABITAT - on dry hills and plains. This is the most common and conspicuous *Artemisia* at lower elevations.

NOTE: *Artemisia tripartita* is very similar except the leaves are more deeply notched and the shrub is much smaller. It is mainly restricted to grasslands in the very southern part of B.C. near the U.S. border.

SHRUBS

Betula glandulosa var. *glandulosa*
(Bog birch)

SHRUB - low and spreading to erect, mostly 1-2 m tall.

BRANCHES - abundantly resinous with wart-like crystalline glands.

LEAVES - nearly circular; round-toothed, commonly 10 teeth per side or less; somewhat thick and leathery, glandular on both surfaces, bright green usually without hairs above, paler and often hairy below.

CATKINS - flowering with the appearance of leaves in the spring.

FRUIT - nutlet with wings obscure to barely half as broad as nutlet.

HABITAT - streambanks, margins of marshes, lakes, and bogs, and on alpine slopes.

Family: BETULACEAE

Cassiope mertensiana
(Merten's mountain heather)

SHRUB, dwarf plant, 5-30 cm tall, forming widespread mat; stems 0.05-0.3 m tall, nearly completely hidden by leaves.

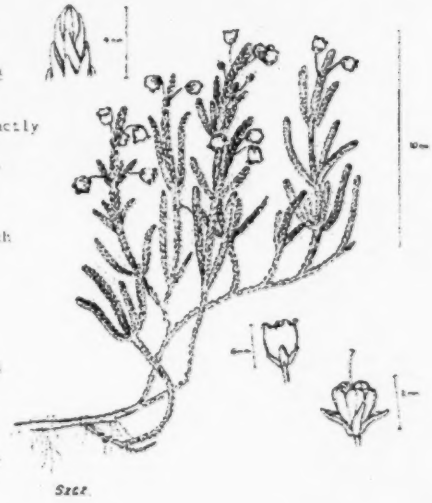
LEAVES - opposite, scale-like distinctly 4-ranked, pressed flat against stem sessile, egg-shaped to lance-shaped, rounded on back, grooved only at extreme base.

FLOWERS - usually several near branch tips, bell-shaped; petals white; sepals reddish.

FRUIT - capsule.

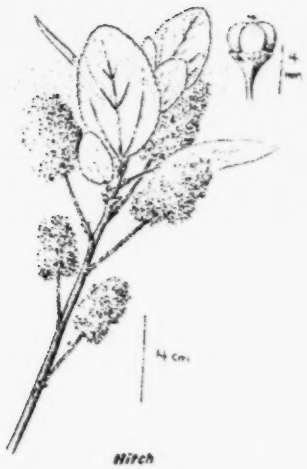
HABITAT - alpine meadows and open forests in upper subalpine zones. A dominant species of alpine heath communities throughout most of B.C.

NOTE: *Cassiope tetragona* has leaves which are grooved on the lower surfaces.



Family: ERICACEAE

SHRUBS



Hitch

Ceanothus sanguineus (Redstem Ceanothus)

SHRUB - bushy, somewhat purplish, with erect stems, 1-3 m tall; the stems are reddish coloured in spring.

LEAVES - alternate, deciduous, with slender pedicles, 1-2 cm long; the leaves are oval, 3-10 cm long with 3 main parallel veins, hairy (at least on the lower veins), finely toothed and glandular.

FLOWERS - small, white, in clusters near the twig ends.

FRUIT - Capsules about 4 mm long, 3 lobed, hard.

HABITAT - Semi-shaded well drained soils along edge of road clearings, forest openings and rock slides.

Family: RHAMNACEAE

Ceanothus velutinus (Snow bush ceanothus)

SHRUB - spreading, evergreen, heavy scented, to 2 m tall.

LEAVES - alternate, shiny, often bronze tinged and gummy upper surface and greyish velvety below, 3 main veins, finely toothed, often curled under in hot weather, thick leathery.

FLOWERS - white, in pyramid shaped clusters.

FRUIT - capsules 4-5 mm long, 3-lobed.

HABITAT - semibarren, gravelly flats or slopes receiving lots of sunshine.

Family: RHAMNACEAE

SHRUBS

Clematis occidentalis ssp. *grossesserata* (Western blue clematis)

SHRUB - slender, climbing plant with shoots branching from main stem very symmetrically with some shoots being tendrils.

LEAVES - leaflets in three's with rounded teeth to toothless or trilobed.

FLOWERS- large, blue, showy, bell-shaped with yellow centre.

FRUIT - white, fluffy seeds (resembling a dust-mop).

HABITAT - on shady mountain slopes or valley bottoms.

NOTE: Also found in the interior of B.C. is *Clematis ligusticifolia* which is similar except it has small white flowers.

Family: RANUNCULACEAE

Chrysothamnus nauseosus (Rabbit bush)

SHRUB - compact, about 0.6 m in height with stems finely hairy and erect, typically light gray-green colour.

LEAVES - 2-7 cm long, thin, velvety, not notched at tip.

FLOWERS- disc-like, yellow, in clusters in late summer.

HABITAT - common in dry interior on dry plains and hills.

NOTE: *Tetradymia canescens* is similar to *C. nauseosus* except the leaves are half as long and there are lumps on the twigs where the leaves join.

Family: ASTERACEAE

SHRUBS

Hitch

Cornus sericea (Red-osier dogwood)

SHRUB - many stemmed, 2-6 m tall, usually freely spreading by layering of reclining or prostrate stems; young stems usually bright reddish, red in autumn.

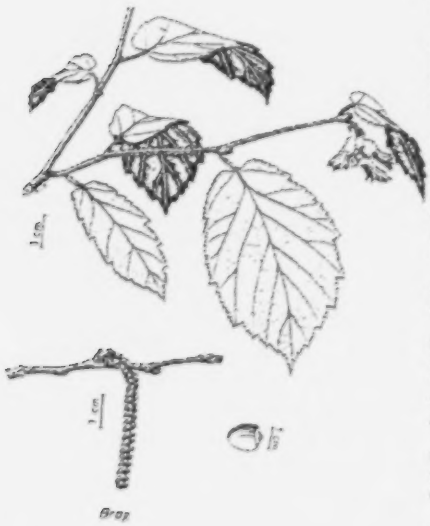
LEAVES - opposite, heavily veined, oval, mostly sharp-pointed 4-12 cm long, greenish above, paler and hairy beneath.

FLOWERS- white in flat topped cluster.

FRUIT - white (occasionally bluish) with a somewhat flattened stone; not edible.

HABITAT - usually in moist soils especially along streams.

Family: CORNACEAE



Brop

Corylus cornuta var. *cornuta*
(Beaked hazelnut)

SHRUB - up to 4 m high, twigs, leaves, and bud scales covered in long white hairs; the bark does not have white lenticels as does *B. papyrifera*

BRANCHES - twigs sparsely long-hairy glabrous after first season.

LEAVES - elliptic to egg-shaped, commonly heart-shaped at base, sharp-pointed at tip; margin double toothed; lower surface paler than upper surface.

CATKINS - flowering before developing of leaves in spring.

FRUIT - spherical edible nut enclosed in flask-like involucre which elongates into a beak with irregularly jagged toothed tip; fruit ripening usually in August and September, nuts are edible.

HABITAT - lower elevations from valley to lower montane slopes; on well-drained soil thickets and open woods.

Family: BETULACEAE

SHRUBS

Empetrum nigrum (Crowberry)

SHRUB - heath like, low spreading, to 15 cm tall; branches with long woolly hairs.

LEAVES - somewhat rounded in cross section, needle-like, alternate and in whorls of 4, hairy with margins rolled under.

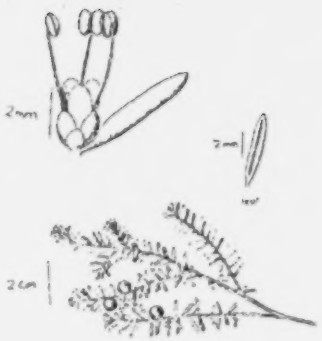
FLOWERS - inconspicuous, purplish, occurring singly near tip of stem.

FRUIT - round, purplish or black berries borne singly along the stem or in clusters of 2-5,edible.juicy with large hard seeds;makes fine jellies and jams.

HABITAT - swamps, muskegs, dry sites, and rocky mountain slopes; throughout the province.

NOTE: Similar to *Phyllodoce empetriformis* (p.) which has more elongate, thinner leaves.

Family: EMPETRACEAE



Hitch

Gaultheria hispidula (Creeping-snowberry)

SHRUB - slender-stemmed, creeping, matted, delicate, evergreen, with brownish hairs.

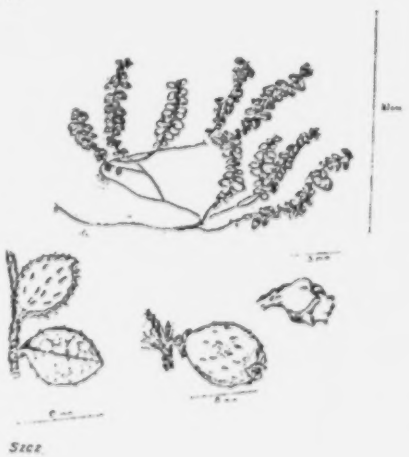
LEAVES - abundant, evergreen, leathery, alternate edges rolled under, with brown appressed scale-like hairs beneath.

FLOWERS - mostly solitary in axils of leaves, on short stem, bell-shaped, pinkish.

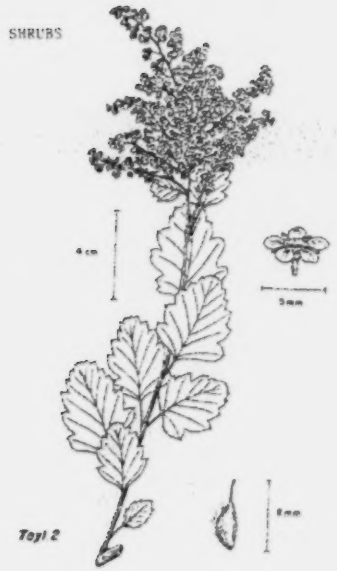
FRUIT - white berry with hairs; juicy with a mild wintergreen flavour.

HABITAT - essentially an interior species found on bogs or upland black spruce forest, on *Sphagnum* hummocks or on decaying wood.

Family: ERICACEAE


Size

SHRUBS



Holodiscus discolor (Creambrush, Oceanspray)

SHRUB - erect slender to 4 m high, with arching branches, brownish peeling bark; young twigs are silky.

LEAVES - mostly 4-7 cm long, broadly ovate to oval, shallowly lobed or double-toothed, smooth above, wooly below, with petioles.

FLOWERS - a panicle-like inflorescence, flowers white to creamy.

FRUIT - hairy achene about 2 mm long.

HABITAT - open gravelly to rocky soil, dry to moist woods.

Family: ROSACEAE

Juniperus communis (Common juniper)

SHRUB - prostrate, trailing-branched to rounded, up to 1.5 m tall.

LEAVES - mostly in 3's, needle-like to narrowly lance-shaped, usually stiff, very sharp-pointed, whitish above, dark green below.

CONES - female cones berry-like, bluish-black, very fleshy, maturing second season.

HABITAT - widespread from dry open woods to exposed slopes, mountain valleys to open rocky slopes, from near sea level to subalpine or alpine areas.

Family: CUPRESSACEAE

SHRUBS

Kalmia microphylla ssp. *occidentalis*
(Western swamp laurel)

SHRUB - small evergreen, slender branched, spreading by layering, often matted to 0.5 m tall.

LEAVES - narrow lance-shaped, dark green above, with conspicuously whitish waxy beneath, margins rolled under, opposite, mostly 2-4 cm long, leaves pointed upward, not bent downwards.

FLOWERS - deep pinkish-rose in terminal cluster, 1-2 cm broad.

FRUIT - a 5-valved capsule.

HABITAT - peat bogs, peaty soils, muskeg, and mountain meadows in coast and interior subzones.

NOTE: *Kalmia microphylla* ssp. *microphylla* has smaller stature, diminitive leaves and is found at higher elevations.

Family: ERICACEAE

Ledum glandulosum var. *glandulosum*
(Glandular-leaved labrador tea)

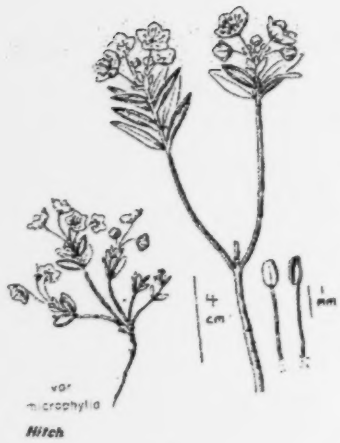
SHRUB - stout erect evergreen, with twigs minutely pubescent and glandular dotted; to 1.5 m tall.

LEAVES - deep green on upper surface and often grayish felt-like hairs underneath, densely glandular, lacking reddish wool under leaves, often rolled over, grouped to give whorled effect; (evergreen) leathery.

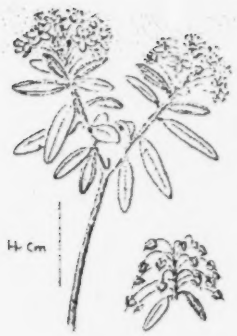
FLOWERS - white in roundish clusters at ends of branches.

HABITAT - found on moderately wet to dry, nutrient poor sites; in MS and ESSF zones.

Family: ERICACEAE



SHRUBS



Hitch

Ledum groenlandicum (Bog Labrador tea)

SHRUB - evergreen, to 1 m tall with dense rusty hairs on twigs.

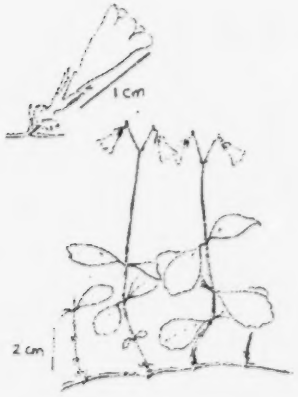
LEAVES - narrow, elliptic, leathery, deep green, above, with dense rusty hairs beneath, margins rolled under, alternate, often drooping downwards.

FLOWERS - white, in terminal cluster from large scaly buds.

FRUIT - a hairy, narrow, oval capsule

HABITAT - in muskegs, swamps, bogs, an moist coniferous woods. A dominant shrub in coastal muskeg and interior black spruce bogs. Indicator of wet, usually very acid and poor organic soils.

Family: ERICACEAE



Hitch

Linnaea borealis (Northern twinflower)

SHRUB - trailing, woody perennial with short, erect leafy stems, less than 10 cm long; more or less hairy.

LEAVES - opposite, firm, broadly elliptic, with shallow teeth.

FLOWERS -paired, pink bell-shaped flowers

HABITAT - in open or dense woods at various elevations. Widespread on a wide range of poor to medium rich dry to moist sites.

Family: CAPRIFOLIACEAE

SHRUBS

Lonicera ciliosa (Western trumpet honeysuckle)

SHRUB - twining vine sometimes climbing to 6 m; twigs hollow with whitish bloom when young.

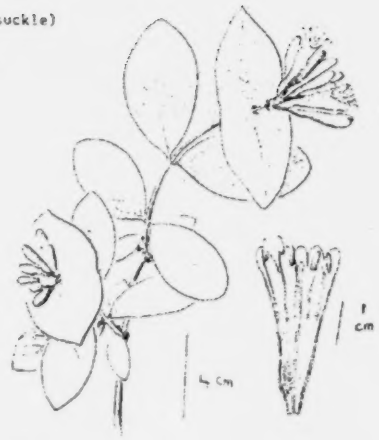
LEAVES - opposite, oval-shaped, with ciliate margins and whitish bloom beneath; the uppermost pairs are joined at the base thus the twig appears to pass through the middle of the leaf.

FLOWERS - dense short terminal inflorescence, orange-yellow to orange-red, trumpet shaped flowers.

FRUIT - red berries nearly 1 cm thick.

HABITAT - woods and thickets from sea-level to moderate elevations in the mountains.

Family: CAPRIFOLIACEAE



Hitch

Lonicera involucrata (Black twin-berry)

SHRUB - 0.5 to 5 m tall; young twigs four angled.

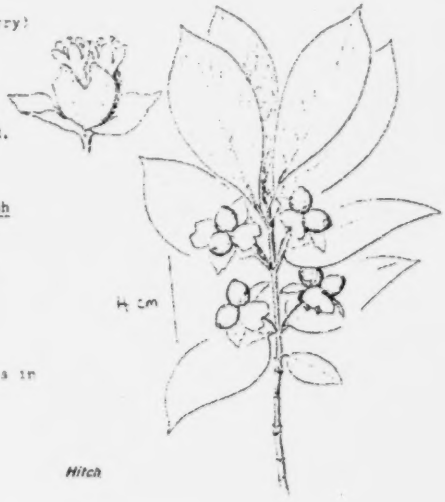
LEAVES - deciduous, opposite, short-stemmed, somewhat elliptical, pointed, often hairy beneath.

FLOWERS - axillary, paired, yellow tubular flower with a pair of purplish bracts.

FRUIT - several-seeded, black, "twin" berries not considered palatable: some Indian groups claimed that eating the berries would make one crazy.

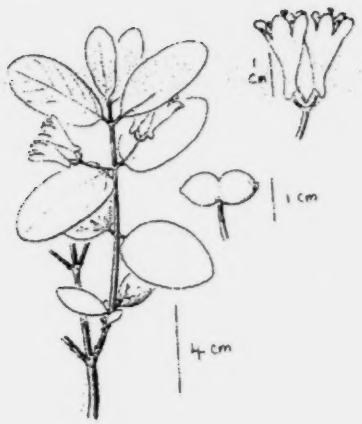
HABITAT - on fairly moist or wet soils in in woodlands and thickets.

Family: CAPRIFOLIACEAE



Hitch

SHRUBS



Lonicera utahensis (Utah honeysuckle)

SHRUB - straggly, from 0.5 - 2 m high with dull grayish bark.

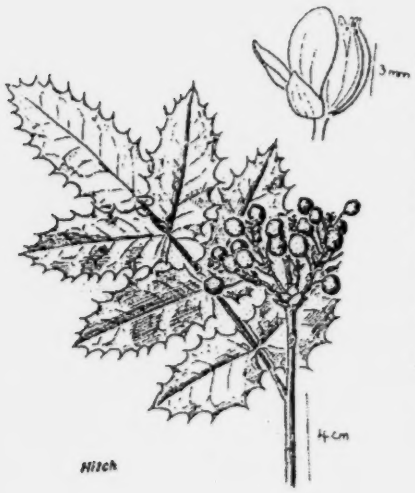
LEAVES - opposite, 2-8 cm long, 1-4 cm broad, smooth above, smooth or hairy below, rounded at apex.

FLOWERS- borne on drooping pedicels, light yellow trumpet shaped.

FRUIT - berries about 1 cm thick, bright red jelly-like, joined at base.

HABITAT - moist wooded or open slopes, at moderate to high elevations in the mountains.

Family: CAPRIFOLIACEAE



Mahonia aquifolium (Tall oregon-grape)

SHRUB - Stoloniferous to erect and stiff branched, holly-like.

LEAVES - have 5-9 leaflets, each twice as long as broad, glossy upper surface shiny to dull lower surface, one main vein, pinnately nerved, prominant spine tipped teeth.

FLOWERS- bright yellow in clusters.

FRUIT - blue berries with whitish waxy covering.

HABITAT - widespread on exposed areas with poor rocky soils up to 1200 m.

Family: BERBERIDACEAE

SHRUBS

Mahonia repens (Creeping oregon-grape)

SHRUB - Procumbent and widely stoloniferous.

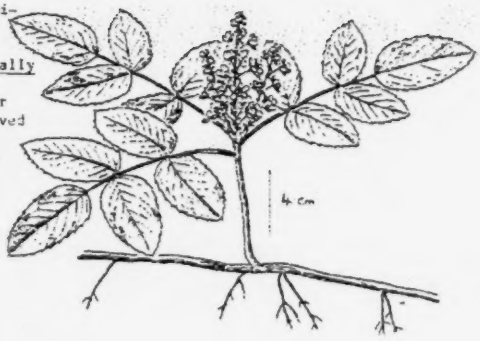
LEAVES - have 5-7 leaflets, each usually less than twice as long as broad, glossy or dull upper surface, dull or whitish under surface, pinnately nerved off one main vein, more toothed than *M. aquifolium*, but teeth are less prominent, spines are longer and thinner.

FLOWERS- bright yellow in clusters.

FRUIT - blue berries with whitish covering.

HABITAT - widely scattered on dry places up to 1800 m.

Family: BERBERIDACEAE



Hitch

Menziesia ferruginea (False azalea)

SHRUB - erect to spreading, to 2 m tall, deciduous, with scaly bark, on older branches: young twigs covered with fine hairs, somewhat glandular.

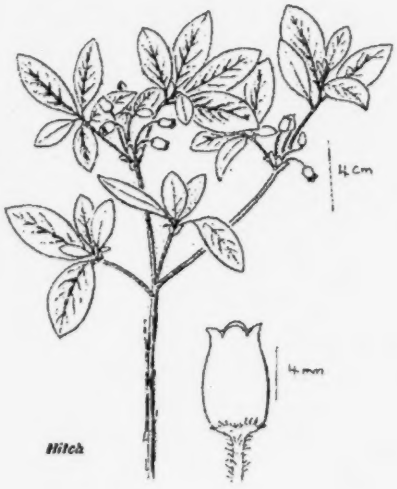
LEAVES - dull thin, oblong to elliptic, light green to blue green, hairy-glandular, serrated margin, on ends of branches.

FLOWERS- in terminal clusters on last year's growth, urn-shaped, small yellowish tinged with red.

FRUIT - persistent oval capsule with thin wall.

HABITAT - shady woods, moist slopes, streambanks; coastal and wet interior.

Family: ERICACEAE



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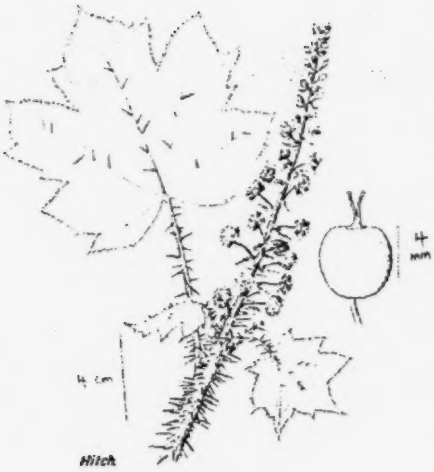


Oplopanax horridus (Devil's club)

SHRUB - deciduous, 1-3 m tall, with thick stems armed with numerous yellowish spines.

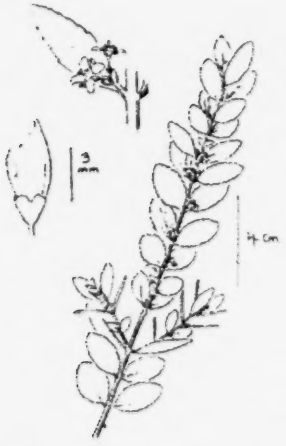
LEAVES - shallowly, palmately 7-9 lobed, broad, twice serrated, "Maple-leaf" -like, with numerous spines present on underside.

FLOWERS - in an elongated cluster to 25 cm long composed of several smaller clusters.

FRUIT - considerably flattened bright red berries; little is known about their edibility, not recommended.

HABITAT - in moist woods, especially in seepage sites and along streams; coastal and wet interior.

Family: ARALIACEAE



Paxistima myrsinites (Falsebox)

SHRUB - erect to prostrate, evergreen to 0.6 m tall with brown, 4-ridged branches.

LEAVES - opposite or nearly so, oval to elliptic, 1-3 cm long, leathery and serrated.

FLOWERS - numerous, small reddish, in axillary clusters, 4-merous.

FRUIT - a small oval 1-2 seeded capsule.

HABITAT - in damper coniferous forests, sea level to timberline; throughout B.C.

Family: CELASTRACEAE

SHRUBS

Penstemon fruticosus (Shrubby penstemon)

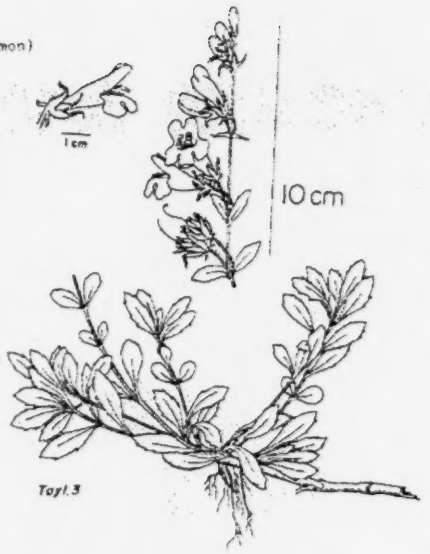
SHRUB - spreading or erect, bushy-branched, 10-40 cm tall.

LEAVES - larger leaves crowded toward base of seasons growth on short sterile shoots, toothed or not toothed, blade up to 6 cm long and 1.5 cm wide, leaves on flowering shoots are reduced and less crowded, opposite.

FLOWERS- on short bracteate raceme large purplish, trumpet shaped with hairy lower lip.

HABITAT - rocky open or wooded places from foothills to high elevations in the mountains.

Family: SCROPHULARIACEAE



Philadelphus lewisii
(Lewis mock orange, Syringa)

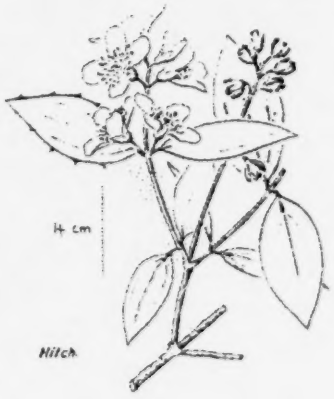
SHRUB - rounded to erect straggling, 1-3 m tall.

LEAVES - opposite, ovate, with a few points or teeth on each side of the leaf, stiff hairs on both surfaces or sometimes smooth above or below except on nerves, 3 main veins, light green.

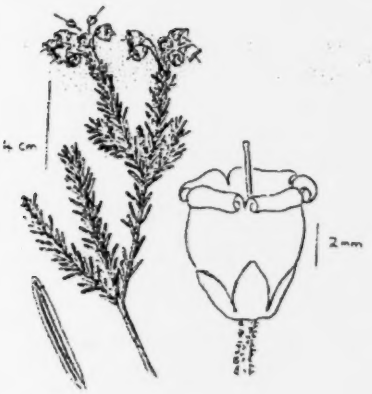
FLOWERS- fragrant, 3-11 in terminal racemes, white.

HABITAT - gullies and watercourses and on rocky cliffs, talus slopes and rocky hillsides.

Family: HYDRANGEACEAE



SHRUBS



Hitch

Phyllodoce empetriformis
(Red mountain heather)

SHRUB - evergreen, much-branched, matted plant 10 - 40 cm tall; young stems glandular hairy becoming glabrous with age.

LEAVES - needle-like, linear, glabrous except for minutely glandular margins; groove present on lower surface.

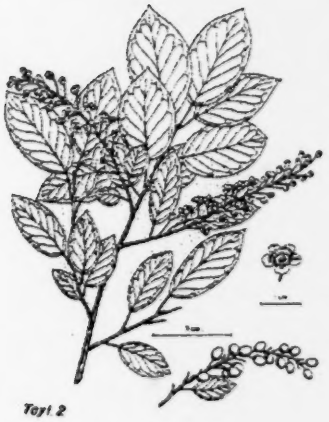
FLOWERS - bell-shaped, petals pink to deep rose.

FRUIT - capsule.

HABITAT - alpine meadows and subalpine zone.

NOTE: *Phyllodoce glanduliflora* is similar except it has yellow urn shaped (rather than bell shaped) flowers, more glandular leaves and is usually found at higher elevations.

Family: ERICACEAE



Toyl 2

Prunus virginiana (Choke cherry)

SHRUB - (sometimes a tree), up to 6 m.

LEAVES - thin, elliptic to oblong or egg-shaped, sharp pointed to tip, blunt at base; finely and sharply toothed; bright green and glabrous above, paler beneath.

FLOWERS - white and numerous in elongated terminal inflorescence (raceme).

FRUIT - drupe red to purple or black, egg-shaped, sweet but astringent; makes excellent jellies.

HABITAT - edge of woods and thickets, often on dry and exposed sites.

Family: ROSACEAE

SHRUBS

Prunus emarginata (Bitter cherry)

SHRUB TO ERECT TREE - 2-15 m tall.

LEAVES - elliptic, oblong, egg-shaped or broadest above middle and tapering to base rounded to blunt at tip, triangular or acute at base, round-toothed to serrulate.

FLOWERS - flat-topped inflorescence of usually 5-8 white flowers.

FRUIT - drupe, red to almost black, very bitter.

HABITAT - stream sides, moist open woods, damp mountain slopes; in mountains at medium elevations, mostly west of coast mountains.

Family: ROSACEAE

Rhododendron albiflorum
(White-flowered rhododendron)

SHRUB - erect slender branched deciduous, 1-2 m high, with peeling bark, young twigs are covered by coarse reddish hairs.

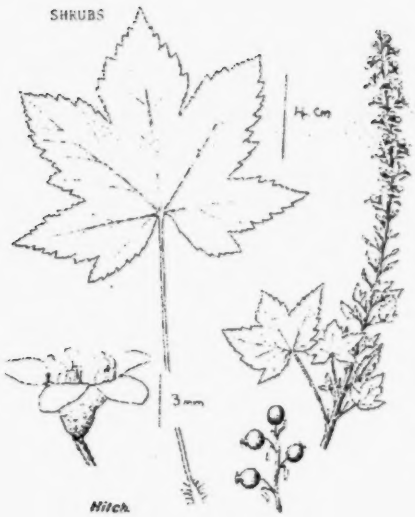
LEAVES - to 8 cm long, thin, elliptic, pointed at both ends, green upper surface, lighter beneath, covered with loose reddish hairs, not toothed, sometimes undulate, borne at end of branches.

FLOWERS- white in axillary clusters of 1-4 along the stems, stamens 10, filaments densely hairy on lower half.

FRUIT - short, heavy walled capsule

HABITAT - wet places at high altitudes, mountain slopes near timberline.

Family: ERICACEAE



Ribes bracteosum (Stink currant)

SHRUB - 1.5 - 3 m, erect, often scraggly unarmed, with yellowish crystaline glands throughout and with a sweet disagreeable odor.

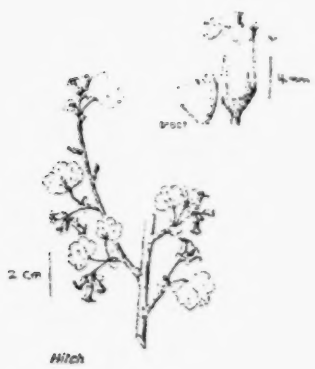
LEAVES - "maple leaf" - shaped, 5-7 lobed, lower surface paler mostly without hairs, 1-2 serrate.

FLOWERS - numerous (20-30) in ascending erect cluster, 15-30 cm long; sepals brownish-purple to greenish; petals white.

FRUIT - black berries, with a whitish bloom and dark glands; disagreeable but considered palatable by some.

HABITAT - streambanks and moist woods; typically coastal.

Family: GROSSULARIACEAE



Ribes cereum (Squaw currant)

SHRUB - spreading or rounded to erect, unarmed, to 1.5 m tall with new branches finely hairy turning grayish-brown or reddish brown.

LEAVES - 1.5-2.5 cm broad, from kidney shaped to wedge or fan shaped, smooth, to downy, often glandular on both surfaces, from smooth to coarsely toothed to shallowly 3 or 5 lobed, olive green, small.

FLOWERS - born singly or in small clusters, finely hairy and sticky, greenish-white to white or pinkish.

FRUIT - small, smooth red currant, unpalatable.

HABITAT - Similkameen and Southern Okanagan valleys, scattered from Kamloops to Lytton.

Family: GROSSULARIACEAE

SHRUBS

Ribes hudsonianum (Northern black currant)

SHRUB - erect unarmed, 0.5 - 15 m tall, with characteristic round, yellow, crystalline and shining glands and strong sweetish unpleasant odor.

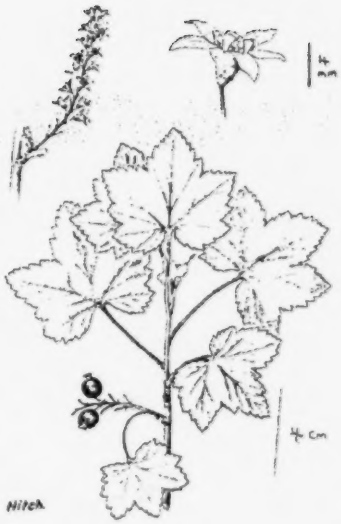
LEAVES - 3.5 - 9 cm broad, glandular to very hairy (and pale) on the lower surface and sparsely hairy on the upper, 5 lobes, the 2 lower segments less deeply and very unequally lobed (smaller leaves than *R. bracteosum*).

FLOWERS- many flowered racemes ascending up to 17 cm long, white.

FRUIT - smooth black currant, in clusters of 8-16, unpalatable.

HABITAT - stream banks, moist woods, thickets at the edge of mountain meadows.

Family: GROSSULARIACEAE



Ribes lacustre (Prickly gooseberry)

SHRUB - erect to spreading, armed with numerous sharp prickles and larger nodal spines.

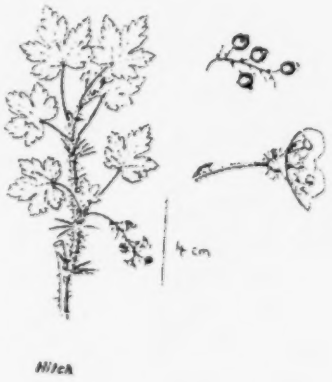
LEAVES - somewhat "maple leaf" shaped, mostly 5-lobed, 1-2 coarsely serrated, heart-shaped base.

FLOWERS - shallow saucer-shaped, in drooping cluster of 7-15 flowers, petals reddish.

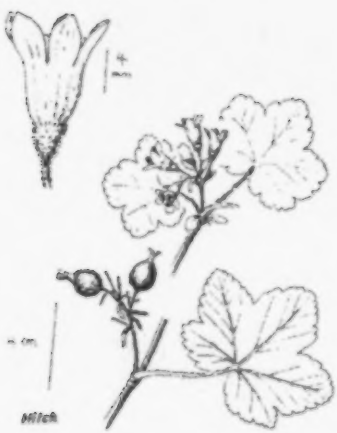
FRUIT - dark purple berries with stalked glands; palatable and with an agreeable flavour.

HABITAT - moist woods and streambanks to drier forest slopes or subalpine ridges; throughout the province.

Family: GROSSULARIACEAE



SHRUBS



Ribes viscosissimum (Sticky currant)

SHRUB - an erect to spreading and usually straggly, unarmed, about 2 m tall; generally soft hairy and sticky; the stems have shreddy bark and are dark reddish-brown when old.

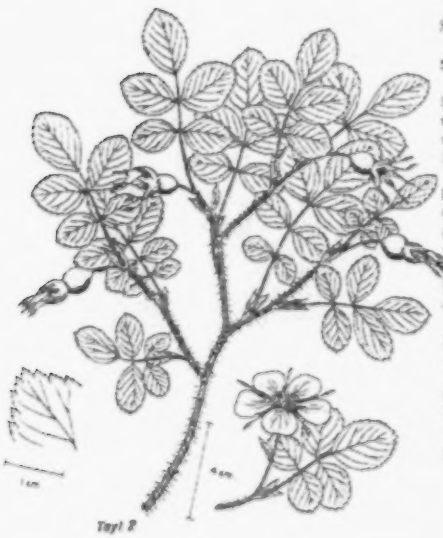
LEAVES - 3-6 cm broad, sticky and downy along the veins, very soft hairy on both surfaces, 3-5 lobed, with rounded lobes irregularly coarsely toothed.

FLOWERS- in clusters of 3-8 greenish-white with pinkish tinge.

FRUIT - very few black (currant) berries, covered with short stiff hairs with a dry and disagreeable taste and smell.

HABITAT - along creeks and on open to heavily timbered moist to rather dry slopes, even to timberline.

Family: GROSSULARIACEAE



Rosa acicularis (Prickly rose)

SHRUB - 0.5 - 1.5 m tall.

STEMS - usually densely covered with numerous straight, bristly prickles of various sizes, those of the nodes longer.

LEAVES - 5-7 leaflets, serrate to double serrate, upper surface green and smooth, lower pale, somewhat short pubescent and often glandular.

FLOWERS - large, pink and born singly or in pairs.

FRUIT - pear-shaped hips, purplish 1-2 cm long, sepals persistant on the hips.

HABITAT - open woods, hills and banks, typically an interior species.

Family: ROSACEAE

SHRUBS

Rosa gymnocarpa (Baldhip rose)

SHRUB - slender erect to 2 m.

STEMS - very bristly with very slender, infrastipular prickles not obviously different from others, flowering shoot is sometimes unarmed.

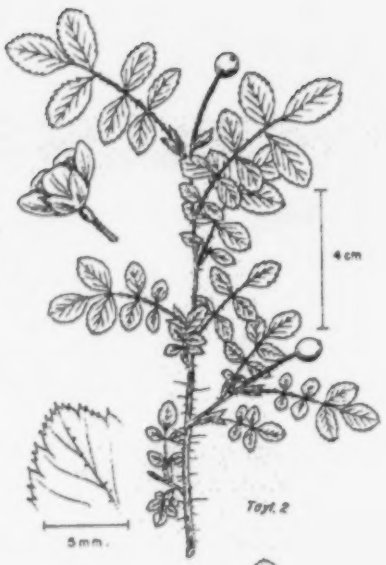
LEAVES - 5-9 leaflets, small, elliptic, thin, paler beneath, sometimes glandular on midrib beneath, otherwise smooth, doubly serrate with gland-tipped teeth.

FLOWERS - small, usually single at ends of branches.

FRUIT - hip bright red, ovoid, 6 mm broad, sepals deciduous from maturing fruit.

HABITAT - woods of southern B.C.

Family: ROSACEAE



Rosa nutkana (Nootka rose)

SHRUB - 2.5 m tall; with often stout, erect stems, armed with a large pair of straight to curved flattened, infrastipular thorns.

LEAVES - 5-7 foliate, singly or doubly serrated, green above, paler beneath.

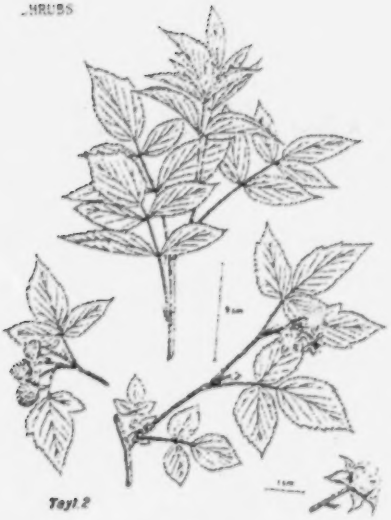
FLOWERS - solitary, large, occasionally 2-3 petals pinkish to rose.

FRUIT - hips more or less spherical, purplish red. Rosehips provide a rich source of vitamin C, and can be used in jellies and tea.

HABITAT - thickets and open woods, both on the coast and the interior. Less common in the interior than *R. acicularis*.

NOTE: *Rosa woodsii* (Woods' rose) may additionally be present; this species differs from and *R. acicularis* and *R. nutkana* in having flowers mostly in flat-topped inflorescences.

Family: ROSACEAE



Toyl 2

Rubus idaeus (American red raspberry)

SHRUB - an erect perennial to 3 m tall: stems (canes) upright, almost unarmed to prickly bristly; shredding bark yellow to cinnamon brown.

LEAVES - of first year canes with 3-7 leaflets, serrated and pointed; of flowering canes mostly 3-foliate.

FLOWERS - drooping or in small grape-like clusters petals white.

FRUIT - drupelets red, rarely yellow, falling intact from the dry receptacle; smaller than domestic variety but better flavour.

HABITAT - streambanks, open woods, clearings, typically an interior species.

Family: ROSACEAE

Toyl 2

Rubus parviflorus (Thimbleberry)

SHRUB - erect to 2.5 m tall, with shredding bark; young growth glandular-hairy; unarmed, with several stems.

LEAVES - large, soft, maple-like, 3-7 lobed, serrated, with long petioles.

FLOWERS - large 3-11 in a long peduncled cluster, petals white.

FRUIT - red, hairy drupelets, juicy but rather insipid in taste.

HABITAT - in open woods, clearings, roadsides, and shorelines, forming dense thickets; wide-spread in the lower 2/3 of the province.

Family: ROSACEAE

SHRUBS

Rubus spectabilis (Salmonberry)

SHRUB - thicket-forming, up to 4 m tall; stem erect to arching, strongly bristly below, less so above; shredding bark brown.

LEAVES - 3-foliate, thin, double-toothed, pointed.

FLOWERS - usually solitary, sometimes 2-4 on short leafy branches; petals reddish-purple, to pink.

FRUIT - drupelets yellow or reddish, more or less coherent; juicy, insipid, and quite seedy.

HABITAT - damp woods, swamps, and banks of streams, at low elevations. Indicates seepage or alluvial sites. Typically coastal.

Family: ROSACEAE

Teyt 2

Salix bebbiana (Bebb's willow)

SHRUB - to small trees 0.5 - 10 m tall with gray-brown bark and widely spreading, reddish brown, hairy to smooth branches.

LEAVES - highly variable when young, mostly elliptic to narrowly elliptic egg-shaped, round at the base, acute to obtuse at apex, thin, usually entire, deep green and eventually smooth above, covered in a fine, waxy powder beneath.

FLOWERS - in catkins, flowering before with leaf bud.

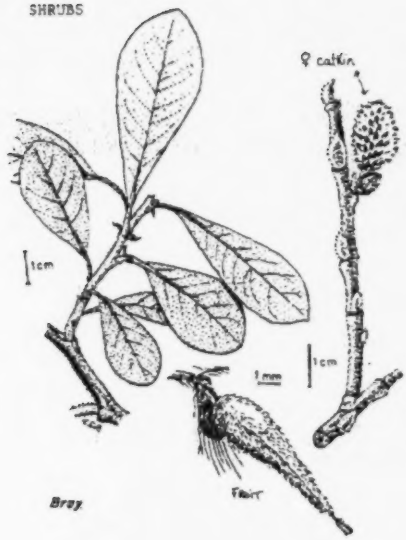
FRUIT - capsule with long stipe and slight hairyness.

HABITAT - stream banks, from lowlands to moderate elevations in mountains, common species to upland forests.

Family: SALICACEAE

Brey

SHRUBS



Salix scouleriana (Scouler's willow)

SHRUB - or small tree 2-12 m tall.

BRANCHES - twigs sparsely to gray-hairy.

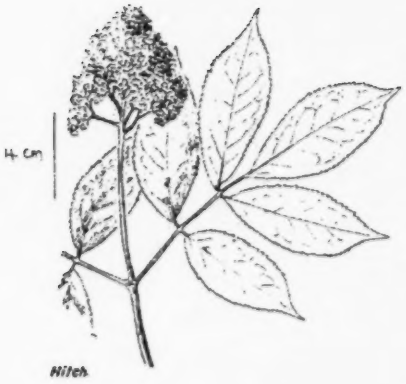
LEAVES - dark green and without hairs above, covered underneath in fine waxy powder and sparse reddish, straight hairs, pressed to leaf's underside, entire, usually broadly egg-shaped to lance-shaped but broadest above the middle and tapering to the triangular-shaped base, tip usually rounded.

FRUIT - a capsule, 5-8 mm long, short-hairy, on stipe to 1 mm long.

HABITAT - streambanks, along sloughs and ditches, common on upland sites; from lowlands to moderate elevations in mountains.

Family: SALICACEAE

Sambucus racemosa (Coast red elderberry)



SHRUB TO SMALL TREE - mostly 2-6 m tall, with soft pithy twigs.

LEAVES - opposite with petiole, mostly 5-7 leaflets; the leaflets lance-shaped pointed, sharply serrated, often somewhat hairy beneath.

FLOWERS - in a rounded or pyramidal cluster, white to creamy.

FRUIT - bright red berry-like drupe, smooth nutlets; not palatable and may cause nausea (typical of var. *arborescens*) (Coastal american red elder) - black berry-like drupes on var. *leucocarpa*.

HABITAT - occurring at low to moderate elevations in moist to wet climatic regions especially on roadsides and in disturbed areas.

Family: CAPRIFOLIACEAE

SHRUBS

Shepherdia canadensis
(Soapberry, Soopolallie)

SHRUB - unarmed spreading, 1-4 m tall; branches brownish; young branches with rusty spots.

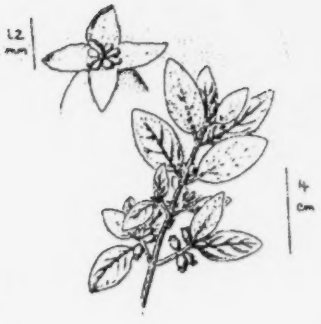
LEAVES - oval, opposite, dark-greenish on upper surface, whitish silvery hairs and rusty brown spots on the under surface.

FLOWERS - 1-several, yellowish-brown, in leaf axils; male and female flowers on separate plants.

FRUIT - orange-red, fleshy, translucent berry; have a strong sour-bitter taste; used by several Indian groups to make "Indian ice-cream".

HABITAT - dry open woods; throughout B.C.

Family: - ELAEAGNACEAE



Sorbus sitchensis (Sitka mountain-ash)

SHRUB - with several erect stems; to 4 m tall, winter buds and young growth with rusty hairs.

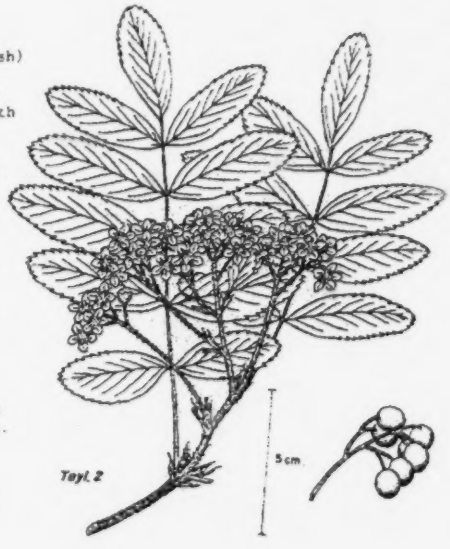
LEAVES - 7-11 leaflets, serrated for not more than 3/4 of their length, blunt and rounded at the top.

FLOWERS - white, in a rounded-top cluster of not more than 80 flowers.

FRUIT - red, berry-like, with a whitish bloom; edible but extremely tart and bitter; much favoured by some birds.

HABITAT - open woods and clearings, montane to subalpine regions. Common with low vigour in coniferous stands.

Family: ROSACEAE



Sorbus scopulina (Cascade mountain-ash)

SHRUB - often forming clumps; to 5 m tall, winter buds and young growth without or with few grayish hairs.

LEAVES - 9-13 leaflets, sharply serrated nearly entire length, often sharp-pointed at the top.

FLOWERS - white, in a flat-topped cluster with up to 200 flowers.

FRUIT - berry-like, orange to scarlet, without a bloom; taste is similar to *S. sitchensis*.

HABITAT - low montane to alpine regions, best vigour in open sites, but common with low vigour in closed, coniferous stands.

NOTE: Intermediates between *Sorbus sitchensis* and *S. scopulina*.

Family: ROSACEAE

Spiraea betulifolia (Shiny-leaf spirea)

SHRUB - strongly rhizomatous, mostly 25 - 60 cm tall; not hairy.

LEAVES - egg-shaped-oblong or egg-shaped but wider toward the tip: usually coarsely, doubly toothed; dark green on upper surface, pale on lower surface.

FLOWERS - in a nearly flat-topped inflorescence petals dull white, often with pale pinkish or lavender tinge.

FRUIT - a follicle.

HABITAT - streambanks, lake margins, open to wooded valleys and hillsides, often in rock slides; from near sea level up to 3000 m.

Family: ROSACEAE

SHRUBS

Spiraea douglasii ssp. *menziesii*
(Subalpine spirea)

SHRUB - erect much-branched to 2 m tall, with young growth woolly.

LEAVES - oblong to oval, serrated above the middle, with dense small white hairs on the underside.

FLOWERS - in a much elongated, narrow and densely compacted cluster which is several times longer than it is broad; petals pink to deep rose.

FRUIT - a follicle.

HABITAT - wet places at edges of lake and lakes and streams, in swamps and bog edges.

Family: ROSACEAE

Teyl 2

Symphoricarpos albus (Common snowberry)

SHRUB - erect branching, 1-2 m tall; twigs very fine, with or without few hairs.

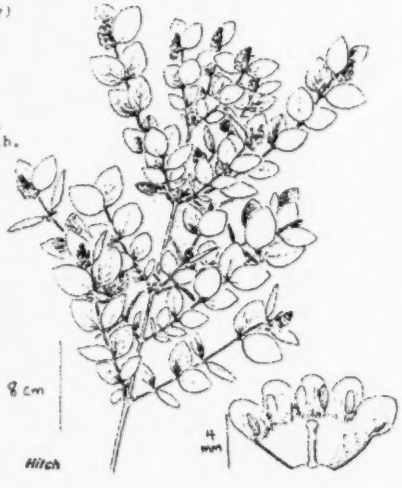
LEAVES - opposite elliptic to elliptic, ovate, entire or with a few course teeth.

FLOWERS - mostly terminal, pink to white short broad "bells" in short dense clusters of few flowers.

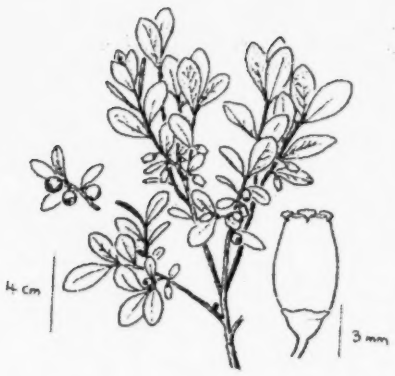
FRUIT - white, persistant through the winter, globose, berry-like, with 2 nutlets; considered poisonous by many; used medicinally by many Indian groups.

HABITAT - thickets, woods, and open slopes, from lowland to middle elevation in mountains.

Family: CAPRIFOLIACEAE



Hitch



Hitch

Vaccinium caespitosum (Dwarf huckleberry)

SHRUB - widely spreading, depressed or tufted, dwarf shrub to 30 cm tall; twigs yellowish-green to reddish, often hairy, somewhat angled.

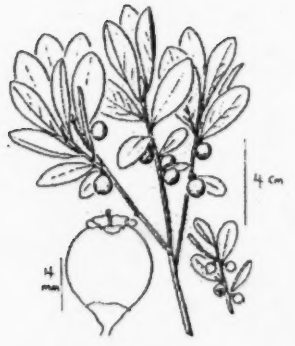
LEAVES - oblanceolate, less than 3 cm long, bright green on both sides, pointed or blunt, serrated on upper half; network of veins pronounced beneath.

FLOWERS - whitish to pink, narrow urn single in axil of leaf.

FRUIT - light blue to blackish-blue with a pale bloom; edible and sweet.

HABITAT - wet meadows, mountain slopes, moist rocky ridges, and alpine tundra.

Family: ERICACEAE



Hitch

Vaccinium deliciosum (Cascade blueberry)

SHRUB - up to 40 cm tall, densely branched often matted, glabrous, greenish-brown branches, inconspicuously angled.

LEAVES - obovate, dull green above, pale green and not glandular beneath, sometimes toothed from tips to midlength or below.

FLOWERS - born singly, pinkish, 5-merous (5 sepals, 5 petals, 5 stamens, etc.)

FRUIT - berry (blueberry) whitish blue, very palatable.

HABITAT - higher altitudes in subalpine forest along the coast, and coast-interior transition.

Family: ERICACEAE

SHRUBS

Vaccinium membranaceum
(Big huckleberry, Blue huckleberry)

SHRUB - branched, erect 0.5 to 2 m tall; young branches yellowish-green, somewhat angled; old branches with grayish shredding bark.

LEAVES - 2-5 cm long, pointed and distinctly serrated, paler on lower surface.

FLOWERS- creamy-pink, single in leaf axil, urn-shaped, appear after leaves.

FRUIT - purplish-black berry, without bloom; edible and of good flavour.

HABITAT - widespread to high elevations throughout B.C.

Family: ERICACEAE

Vaccinium myrtilloides
(Velvet-leaved blueberry)

SHRUB - deciduous low shrub to 40 cm high, with cylindrical and pubescent branches, the young ones being very dense velvety pubescent.

LEAVES - entire, softly pubescent, green elliptic to oblong-lanceolate up to 4 cm long when mature.

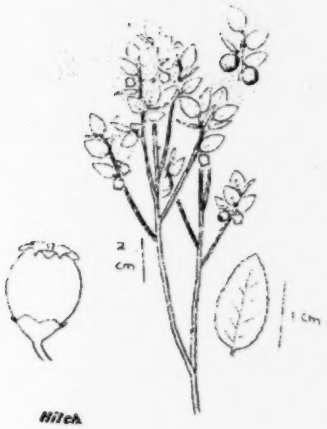
FLOWERS- 5-merous in short clusters terminating the branchlets, greenish-white, or tinged with pink, broadly cylindric bell-shaped.

FRUIT - berry up to 10 mm in diameter, blue with heavy bloom, edible and sweet.

HABITAT - dry bogs, shady woods and wooded rocky outcrops.

Family: ERICACEAE

SHRUBS



Hitch

Vaccinium myrtillus (Low blueberry)

SHRUB - low erect slender branched shrub, with strongly angled greenish-brown branches (thicker and less numerous than *V. scoparium*), usually finely pubescent in the grooves.

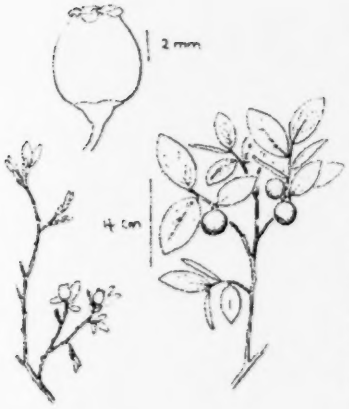
LEAVES - ovate, 1-3 cm long, sharply toothed acute or rounded at apex, glabrous, light green, strongly veiny with prominent mid-rib on lower surfaces, lower leaves smaller than upper leaves.

FLOWERS - pinkish, single in axils, on nodding pedicels.

FRUIT - dark red to blue-black berry without a bloom, edible and sweet.

HABITAT - high altitudes where moist conditions prevail.

Family: ERICACEAE



Hitch

Vaccinium ovalifolium (Oval-leaved huckleberry)

SHRUB - slender, spreading, deciduous, to 1.5 m tall; old branches grayish; young twigs brownish to yellowish.

LEAVES - old growth leaves, oval-shaped blunt at both ends, entire or nearly so, green above, lighter beneath, leaves on new growth variable.

FLOWERS - pink "bells", appearing before leaves; style included.

FRUIT - blue-black berries with bluish bloom; very edible and of considerable size.

HABITAT - cool shady forest; to sub-alpine elevations.

Family: ERICACEAE

SHRUBS

Vaccinium oxycoccos
(Wild cranberry, Bog cranberry)

SHRUB - creeping and vine-like; to 40 cm tall; stems slender with brown to black bark, glabrous to finely hairy.

LEAVES - 6-10 mm long, persistent, alternate, leathery, edges rolled under, dark green above, grayish-waxy beneath without hairs, pointed at apex.

FLOWERS - borne on slender, long nodding stem, often solitary, not more than 3; deep pink with recurved petals and protruding stamens;

FRUIT - dark red berry; resembles domestic cranberry in taste.

HABITAT - restrict to *Sphagnum* bogs. Widespread in coastal muskegs and interior black spruce bogs.

NOTE: Compare with *Gaultheria hispidula*.

Family: ERICACEAE

Hitch

Vaccinium parvifolium (Red huckleberry)

SHRUB - erect to 4 m tall, young and old branches green and sharply angular.

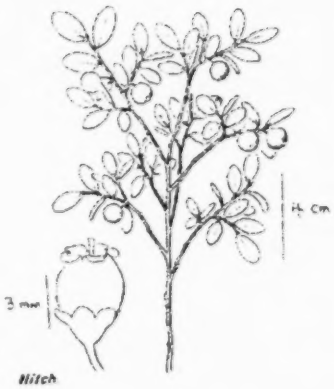
LEAVES - slender, green, oval to oblong; entire at maturity; finely serrated and persistant when juvenile.

FLOWERS- greenish-yellow or pinkish, borne singly on short pedicels.

FRUIT - bright red berry; edible, sour taste but of good flavour.

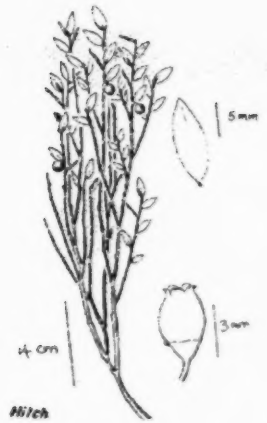
HABITAT - in coniferous forests, on raw humus and decaying wood.

Family: ERICACEAE



Hitch

SHRUBS



Vaccinium scoparium (Grouseberry)

SHRUB - low broom-like to 25 cm tall with many fine, erect strongly angled, green to yellowish-green glabrous branches.

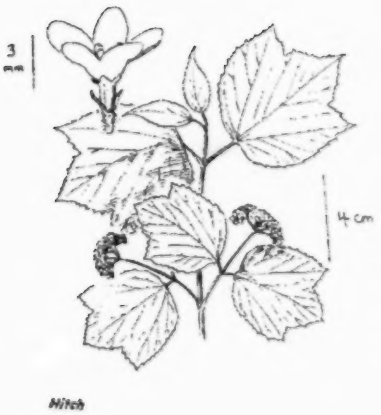
LEAVES - lanceolate, acute at apex, thin, glabrous, light green, shiny above dull beneath, conspicuously veiny, finely toothed, with prominant mid-rib; small.

FLOWERS- single in axils on nodding pedicels, bell-shaped, pink.

FRUIT - bright red berry, edible and sweet.

HABITAT - understory species found at subalpine and alpine elevations.

Family: ERICACEAE



Viburnum edule (High-bush cranberry)

SHRUB - straggling to erect, 0.5 - 2.5 m tall.

LEAVES - opposite, palmately veined, shallowly 3-lobed, hairy beneath, sharply toothed, often with a pair of teeth near the junction of the blade with the stem.

FLOWERS - a small cluster of a few white flowers borne on short axillary stem with a pair of leaves.

FRUIT - a one-seeded red or orange berry-like drupe with a large flattened stone; edible, juicy, acid and tart.

HABITAT - moist woods, scrubby swamps, and streambanks; province-wide.

Family: ERICACEAE

FERNS

Athyrium filix-femina
(Lady-fern)

RHIZOME - stout, erect, ascending and chaffy.

FROND- to 2 m tall, erect, spreading.

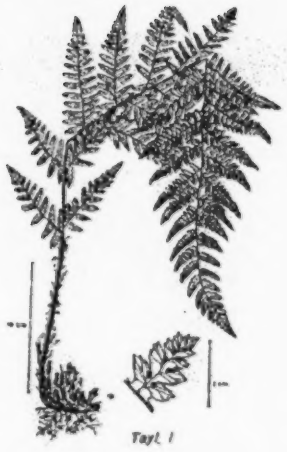
STIPE - short, fragile, straw-coloured, scaly at dark base.

BLADE - narrowly to broad lance-shaped tapering at both ends.

PINNAE - basal ones increasingly more symmetrical.

PINNULES - serrated, with rounded tip.

HABITAT - moist woods, meadows and damp shady places.



Botrychium virginianum
(Rattlesnake fern)

PLANT - erect 25 to 75 m tall, with a sterile blade and a <u>fertile blade bearing sporangium</u>

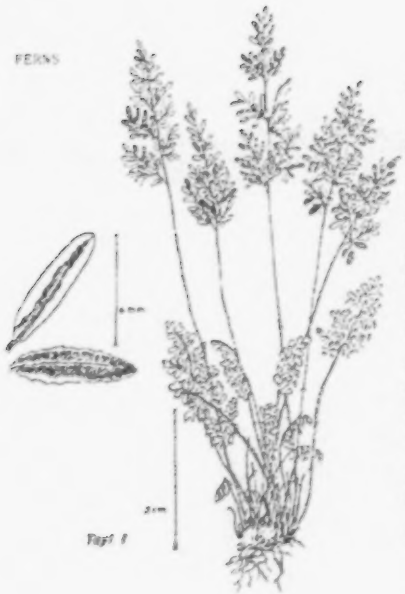
STIPE - 0.07 - 0.25 m long, equalling or exceeding length of sterile blade.

STERILE BLADE - deciduous, thin, deltoid.

FERTILE PORTION - a long stalked spike, 2-3 pinnately compound 1-23 cm long

HABITAT - woods, meadows, and damp open places.

FERNS



Cryptogramma crispa (Parsley fern)

RHIZOMES - short creeping, relatively stout, tufted.

FRONDS - numerous, clustered, dimorphic.

STIPE - straw-coloured, scaly at base.

BLADE - ovate or ovate-lanceolate, 2-pinnate-pinnatifid.

PINNAE - greenish, alternate or subopposite, few, short-stemmed.

PINNULES - ultimate segments ovate, oblong or obovate, crenate or incised, thick, opaque with sori scattered and blending together underneath on fertile fronds.

HABITAT - Rock crevices and ledges, talus slopes.

NOTE: *Woodsia oregana* looks somewhat similar but does not have dimorphic fronds.

Dryopteris carthusiana (Spiny wood-fern)

RHIZOME - stout, erect, ascending and chaffy.

FROND 0.3 - 1 m tall, spreading, mostly deciduous.

STIPE - usually shorter than blade, with brownish scales, 15 - 45 cm long.

BLADE - triangular to oblong, nearly 3-pinnate.

PINNAE - basal ones broadly triangular usually large and not symmetrical.

PINNULES - serrated, with pointed tip.

HABITAT - cool moist woods. Tolerates more acid conditions than *Athyrium*, but, is still an indicator of good subhygric-hygric sites.

FERNS

Dryopteris Filix-mas (Male fern)

RHIZOME, stout, ascending, with long scales.

FRONDS - erect, deciduous, lance-shaped.

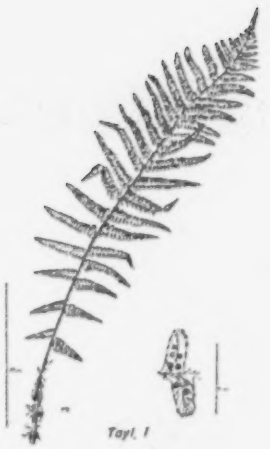
STIPE 2 - 15 cm long, densely covered with long brown scales.

BLADE - 2 - pinnate.

PINNAE - lance-shaped, sharp pointed.

PINNULES - serrated, blunt tip.

HABITAT - rocky woods, shaded talus slopes, and lava fields. Distribution very sporadic, not a common fern.



Gymnocarpium dryopteris (Oak fern)

RHIZOMES - slender, wide-creeping, with a few pale brown scales.

FRONDS - erect, deciduous, to 40 cm tall.

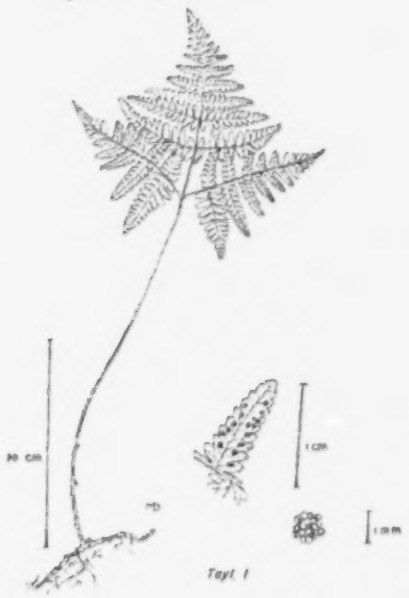
STIPE - slender, shiny, straw-coloured, occasionally with papery scales.

BLADE - broadly triangular, 3 pinnate.

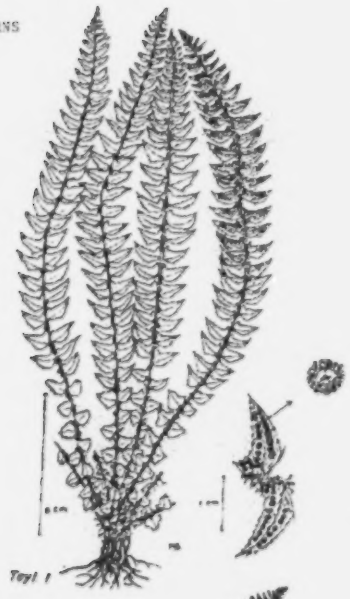
PINNAE - basal ones deltoid, lower pair nearly as large as rest of blade and distinctly asymmetrical.

PINNULES - crenate

HABITAT - moist woods, shaded rocky slopes and ledges, very common throughout the province.



FERNS



Tayl. I

Polystichum lonchitis (Mountain holly fern)

RHIZOME - stout, erect, chaffy, covered with old stipe-bases.

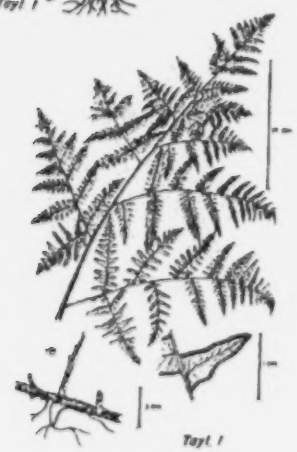
FRONDS - several, ascending in close crown, up to 10 cm long.

STIPE - very short, straw-coloured, densely chaffy with rusty-brown scales.

BLADES - evergreen, leathery, linear to narrowly linear lance-shaped, tapering at both ends, simply pinnate.

PINNAE - alternate, basal pinnae triangular, middle and upper pinnae oblong-lance-shaped, sickle-shaped bases flared above triangular below, unevenly toothed; sori (large, touching, in 2 rows, midway between mid-vein and margin, confined to upper half of frond, indusia large.

HABITAT - crevices of rocks, mostly basic; cool, shaded talus and rocky slopes.



Tayl. I

Pteridium aquilinum (Western bracken)

RHIZOME - below ground surface, much branched, wide-spreading with hairs and without scales.

FRONDS - very large, deciduous, scattered along rhizome.

STIPE - stout, relatively long, somewhat straw-coloured, tough and woody.

BLADE - coarse, 2-3 pinnately compound.

PINNAE - opposite or nearly so.

PINNULES - alternate, edges rolled under.

HABITAT - dry, sunny sites, often weedy, colonizing roadsides, clearings, etc. Usually in slightly acidic soils, province wide.

FERNS

Thelypteris phegopteris
(Northern beech-fern)

RHIZOME - long, slender, sparsely scaly, 0.1 - 0.5 m long.

FRONDS - scattered, deciduous, 10 to 50 cm long.

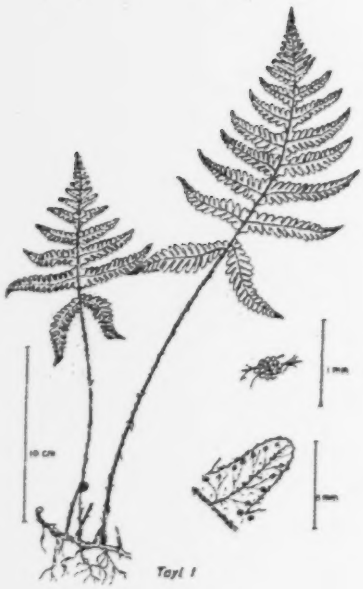
STIPE - equal or usually longer than blade, brown basally, straw-coloured upwards, sparsely scaly.

BLADES - ciliate-margined, hairy both sides, triangular-egg-shaped in outline, 10 to 0.1-0.2 m long.

PINNAE - rolled to back, 10 to 25 opposite or offset pairs, sessile, lowest pairs largest curving downward, upper pairs reduced.

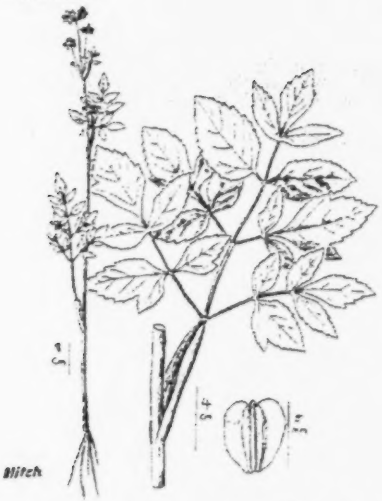
PINNULES - oblong obtuse, entire or crenate, with sori borne just within the margins, indusia lacking.

HABITAT - cliff crevices, moist banks in wooded regions, meadows.



Taxi I

APIACEAE



Angelica acuta (Sharp-toothed angelica)

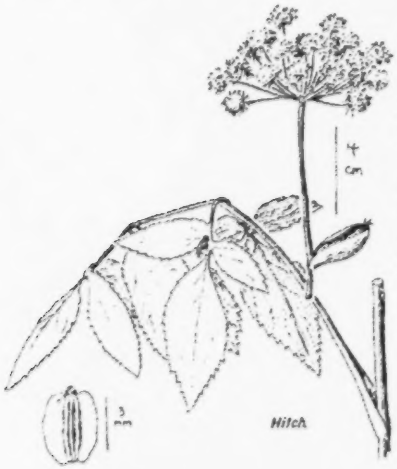
HERB - robust, 0.3-2 m tall; stem not bent at point of insertion of compound leaves, has disagreeable odor

LEAVES - large, arranged in three's, twice compound (2 leaflets per leaf); leaflets smooth or hairy along the veins beneath, ovate to lanceolate, pointed apex, mostly 4-14 cm long and 1.5-8 cm wide, serrate or doubly serrate and sometimes irregularly dissected.

FLOWERS - 2 or more umbels (flowers arise from one point), white (sometimes pinkish), petals smooth.

FRUIT - elliptic to obovate, 4-7 cm long and 4-5 mm wide.

HABITAT - stream banks, wet meadows, marshes and bottomlands from the foothills to moderate elevations in the mountains.



Angelica genuflexa (White angelica)

HERB - leafy-stemmed perennial herb arising from erect simple stem base; often more than 1 m tall; the stem commonly covered in a fine, waxy powder.

LEAVES - pinnae often deflexed, ternate-pinnately about twice compound; leaflets egg-shaped or lance-shaped to elliptic coarsely serrate, veins tending to end at the points of the teeth, without hairs, or hairy only along veins beneath.

FLOWERS - generally several compound inflorescences with elongate flower stems which seem to arise from a common point; flowers white or pinkish.

FRUIT - glabrous, almost circular in outline, lateral wings broad, about as wide as body.

HABITAT - moist places; swamps, along streams.

APIACEAE

Cicuta douglasii (Water hemlock)

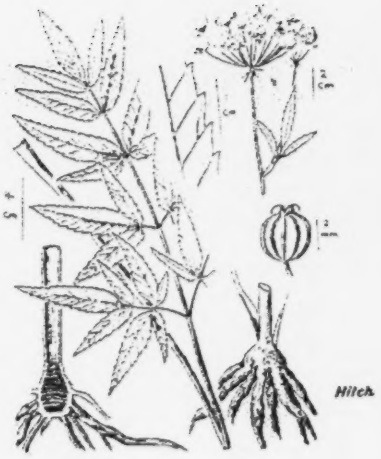
HERB - stout herb, 0.5-2 m tall; stems solitary or few together from tuberous-thickened and chambered base, several of roots generally tuberous-thickened as well.

LEAVES - basal and on stem. 1-3 times ternate-pinnate, with well-defined, lance-linear to lance-egg-shaped, serrate, leaflets with lateral veins ending between the teeth.

FLOWERS - white to greenish in several inflorescences with flower stems arising from a common point, like an umbrella.

FRUIT - round-egg-shaped to circular, with corky, thickened, unequal ribs.

HABITAT - marshes, edges of streams and ditches, and in other wet low places, from plains and lowlands to mountain valleys; all parts of plant are highly poisonous to man as well as to livestock.



Heracleum sphondylium ssp. *montanum* (Common cow-parsnip)

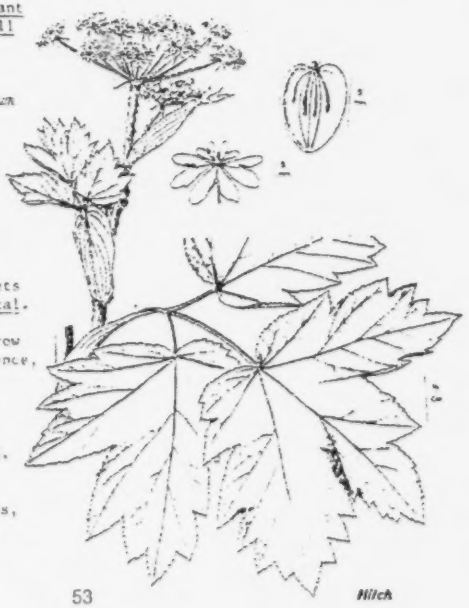
HERB - very large, hairy, single-stemmed perennial from stout taproot or cluster of fibrous roots, 1-3 m tall; stems hollow.

LEAVES - once ternate, with broad distinctly petiolate, coarsely toothed and palmately lobed leaflets 10-30 cm long and wide, asymmetrical.

FLOWERS - with 5-10 deciduous narrow bracts beneath compound inflorescence, bractlets below secondary flower stems similar to bracts; flowers white.

FRUIT - egg-shaped to heart-shaped, with or without hairs.

HABITAT - streambanks, moist slopes, moist low ground, and woods; from lowlands to moderate elevations in mountains.



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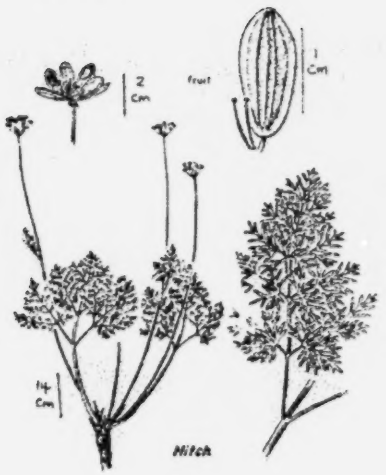


Lomatium dissectum (Fern-leaved lomatium)

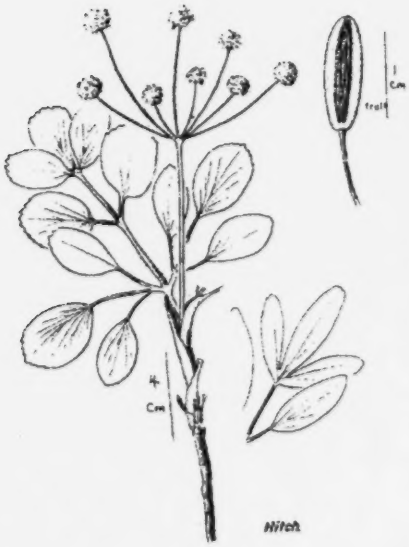
HERB - robust perennial from a large woody taproot 0.5-1.5 m tall at maturity; stems are smooth and ascending.

LEAVES - basal and stem leaves, the lower ones are the largest; the leaves are rough and are dissected into many series of narrow segments up to 1 cm long, spicy smell to leaves.

FLOWERS - an umbel containing 10-30 flowers, yellow or purple.

FRUIT - is elliptic, 8-17 mm long and 4.5 - 10 mm wide.

HABITAT - rocky slopes and dry meadows, often on talus from foothills and valleys to moderate elevations in the mountains.



Lomatium nudicaule (Barestem lomatium)

HERB - stems are solitary or several from the crown of a stout taproot, plant 0.2 - 0.9 m tall.

LEAVES - compound; leaflets are veiny, lanceolate to ovate 2-9 cm long and 1-6 cm wide, leaflet margins often toothed at the tip.

FLOWERS - umbel of yellow flowers; umbellets are well separated from each other, and well flowered.

FRUIT - oblong or elliptic, winged.

HABITAT - dry open or sparsely wooded places from lowlands to moderate elevations in the mountains.

APIACEAE

Lomatium macrocarpum
(Large-Fruited lomatium)

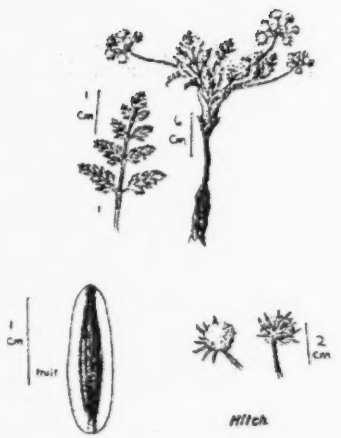
HERB - with elongate taproot thickened throughout or with a tuberous base; plants branched near the base with several stems, flowering stems are 10 - 25 cm long tending to be purplish-green.

LEAVES - clustered near the ground, herbage is hairy, grayish colour, leaves are pinnately dissected into small segments up to 9 mm long and 2 mm wide, petioles purple.

FLOWERS - umbels of white or purplish-white flowers.

FRUIT - narrow, linear oblong, 2-5 times as long as wide, smooth or hairy.

HABITAT - open rocky hills or plains, not extending much into the mountains.



Lomatium triternatum
(Narrow-leaved lomatium)

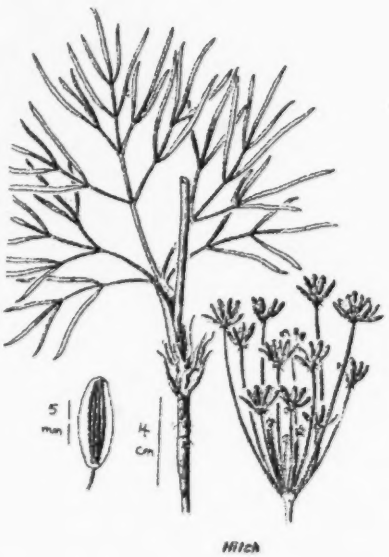
HERB - taproot is elongate and not thickened, surmounted by a simple or few-branched crown; stems are few or solitary, erect, 0.2 - 0.8 m tall.

LEAVES - finely hairy (sometimes almost smooth); usually basal leaves or low stem leaves; leaves are divided into three's or sometimes the basal leaves are in five narrow segments or leaflets 1-10 cm long.

FLOWERS - umbels of white, yellow, or purple flowers.

FRUIT - oblong to elliptic, broadly winged.

HABITAT - open slopes and meadows in dry to fairly moist soil from the lowlands to moderate elevations in the mountains.



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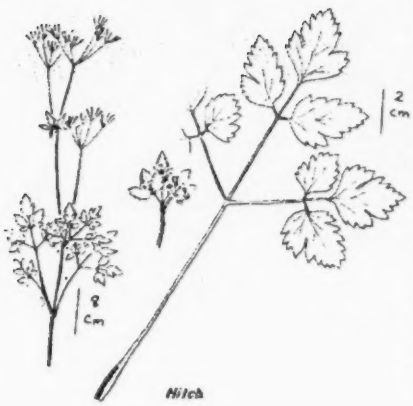


Osmorhiza chilensis
(Mountain sweet-cicely)

HERB - perennial with well developed taproot; stem solitary or sometimes 2-3, slender, 0.3 - 1 m tall, branched above.

LEAVES - twice ternately compound; leaflets coarsely serrated, thin; basal leaves several long-stemmed; stem leaves 1-3, with short stem.

FLOWERS - greenish-white, inconspicuous umbrella-shaped clusters.

FRUIT - schizocarp, concavely narrowed at summit and broadly beak-like near apex, 1.2 - 2.2 cm long.

HABITAT - woodlands from sea level to moderate high elevations.

NOTE: A similar species is *Osmorhiza purpurea* which has purple flowers.

ASTERACEAE - Aster Family

Achillea millefolium (Yarrow)

HERB - perennial aromatic, often rhizomatous, 1-10 cm.

LEAVES - much pinnately dissected, only lower ones with petiole; young dried leaves used to make herbal tea.

FLOWERS - white, radiate heads numerous, in flat to round topped inflorescence; rays 3-5 white, yellow centers.

HABITAT - often on disturbed sites; throughout B.C.

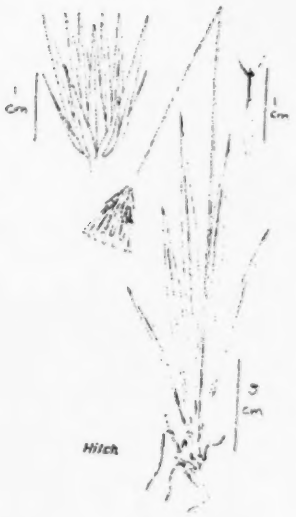
Agoseris glauca
(Short-beaked false dandelion)

HERB - glabrous or hairy, whitish, perennial 10 - 40 cm tall.

LEAVES - "rubbery" with a "milky juice" when split; linear to lanceolate, 5-35 cm long, 1-30 mm wide, entire to toothed; involucre, 1-3 cm high, the bracts overlapping, sharply pointed.

FLOWERS- yellow, dandelion-like, sometimes drying pinkish, flowers mid-summer.

HABITAT - meadows and other open places at all elevations.



ASTERACEAE - Aster Family

Anaphalis margaritacea
(Pearly everlasting)

HERB - perennial, erect, rhizomatous 0.2 - 0.9 m tall, leafy, loosely white woolly.

LEAVES - alternate, entire, narrowly oblong, sessile, less hairy above than below, edges rolled under.

FLOWERS - numerous discoid heads crowded into a short broad inflorescence., involucral bracts pearly white, preserving well when dried.

HABITAT - occurring in forest openings, roadsides and pastures; lowlands to moderate elevations.

Antennaria dimorpha (Low pussytoes)

HERB - dwarf perennial (3 cm) arising from a compact base, forming appressed mats; not stoloniferous.

LEAVES - fuzzy, numerous, linear or oblanceolate up to 3 cm long and 5 mm wide.

FLOWERS- heads solitary, on very short stems, woolly, whitish, flowering in early spring.

HABITAT - dry open places, chiefly in the foothills and lowlands, increaser on disturbed grasslands.

ASTERACEAE - Aster Family

Antennaria microphylla (Rosy pussytoes)

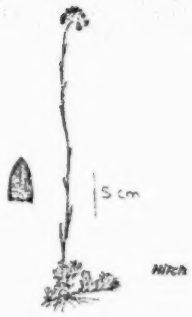
HERB - mat forming, stoloniferous, perennial 5-40 cm tall, erect, not appressed as *A. dimorpha*

LEAVES - gray, fuzzy (rarely smooth above), erect, basal leaves oblanceolate or spatulate; 8-30 mm long and 2-7 mm wide.

FLOWERS- heads several in loose cluster, deep pink to bright or dull white. Terminal portion of involucral bracts white or pink.

HABITAT - dry open places, meadows and open woods from plains and foothills to moderate or high elevations.

NOTE: similar to *Antennaria parvifolia* and *Antennaria umbrinella*



Antennaria neglecta (Field pussytoes)

HERB - mat forming perennial with well developed runners (stolons), 15-40 cm tall; stems with narrow, sessile leaves.

LEAVES - basal leaves spatula-shaped, almost elliptical lance-or egg-shaped but largest above middle and tapering to base; persistently densely hairy with white hairs beneath, thinly hairy to without hairs and green above.

FLOWERS- heads several in dense head-like inflorescence; involucral bracts brown at base and tips are white, thin and transparent; flowering late May to early August.

HABITAT - occurring in open woods at moderate and low elevations.

ASTERACEAE - Aster Family

Antennaria parvifolia (Nuttall's pussytoes)

Hitch

HERB - mat-like with numerous leafy stolons seldom over 15 cm high (shorter than *A. microphylla*).

LEAVES - basal leaves spatulate or oblanceolate 1-3.5 cm long and 2.5 - 10 mm wide, generally larger and broader and more fuzzy than those of *A. microphylla*.

FLOWERS - heads larger and more closely aggregated, and the flowering stalk longer than *A. microphylla*. Generally bright white (sometimes dull). Terminal portion of involucral bracts white or pink.

HABITAT - dry open places, in the foothills and on the lowlands.

Antennaria racemosa (Racemosa pussytoes)

Hitch

HERB - perennial with creeping, leafy stolons, stems 0.1 -0.6 m tall, sparsely haired below, becoming glandular above.

LEAVES - basal leaves with short petioles, elliptic to ovate blade, 1.5 - 8 cm long and 1-5 cm wide, cottony-hairy beneath, green and smooth (or almost smooth) above; stem leaves are narrower and without petioles.

FLOWERS - heads on slender stalk, in an open raceme or occasionally more crowded, pale greenish to pale brownish.

HABITAT - cool mountain woods.

NOTE: Similar to *A. neglecta* except leaves are distinctly larger and more rotund and inflorescence is more open.

ASTERACEAE - Aster Family

Antennaria umbrinella (Dusky brown pussytoes)

HERB - mat forming stoloniferous perennial up to 0.2 m tall, sometimes slightly woody at the base.

LEAVES - basal leaves, woolly on both sides, grayish-green, spatulate or oblanceolate, stem leaves are more lance-shaped.

FLOWERS- several radiate heads in rounded cluster; brownish white.

HABITAT - widespread.

Arnica cordifolia (Heart-leaved arnica)

HERB - perennial from long, nearly naked rhizomes; stems solitary or few loosely clustered, 0.1-0.6 m tall.

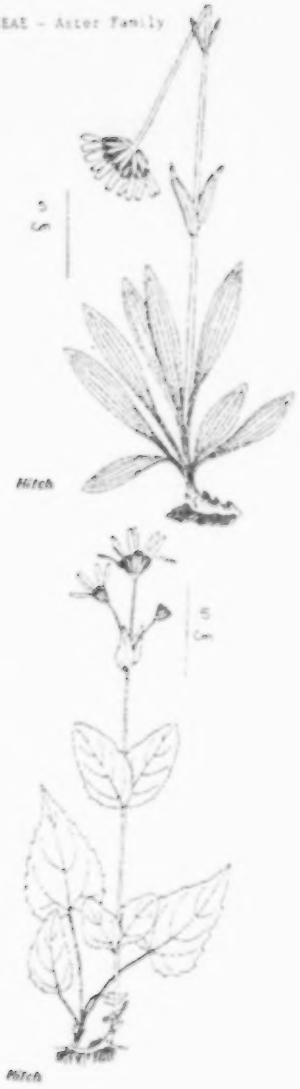
LEAVES - opposite, basal ones long-petiolate, heart-shaped, mostly on separate short shoots; stem leaves 2-4 pairs, more or less heart-shaped; often coarsely toothed.

FLOWERS - 1-3 radiate heads, yellow, involucre densely white-hairy; achenes short-hairy throughout.

HABITAT - mostly in woodlands, lower to high elevations in mountains.

NOTE: the opposite leaf arrangement distinguishes *Arnica* from all other genera in the Aster family.

ASTERACEAE – Aster Family



Arnica fulgens
(Brown-haired orange-flowered arnica)

HERB – perennial from short, free-rooting, scaly, rhizomes; the basal leaves and old leaf bases with conspicuous axillary tufts of long brown wool; stem stout, 0.2 – 0.6 m tall, often hairy especially the upper stem.

LEAVES – opposite 3-5 nerved, margins smooth, sparsely to densely hairy and glandular; basal leaves with petioles, oblanceolate to narrowly elliptic blade 3-12 cm long and 1-4 cm wide; stem leaves (2-4 pairs), becoming without petioles and reduced.

FLOWERS- radiate with long white hairs, solitary or sometimes 3.

HABITAT – open places in the foothills and at moderate elevations in the mountains.

Arnica latifolia (Mountain arnica)

HERB – perennial, stem 0.1-0.6 m tall, glandular and sometimes hairy appearing more leafy than *A. fulgens*.

LEAVES – opposite basal ones long-petiolate, sometimes on separate shoots; stem leaves 2-4 pairs, more or less sessile, glandular-hairy; rarely heart-shaped, usually broadly lance-shaped.

FLOWERS – radiate heads, 1-several, yellow; involucre with few or no long hairs, achenes glabrous below or throughout.

HABITAT – moist woods and meadows, moderate to high elevations.

NOTE: Similar to *A. fulgens*, a major difference being that *A. fulgens* is often distinctly glandular pubescent.

ASTERACEAE - Aster Family

Artemisia campestris
(Northern field wormwood)

HERB - biennial or perennial with taproot, 0.1 - 1.0 m tall. This *Artemisia* is not woody.

LEAVES - basal rosette leaves are crowded, dissected 2 or 3 times, smooth or silky, often deciduous; stem leaves are less dissected, the upper ones in three's or not dissected at all, leaves aromatic when crushed.

FLOWERS - spike-like or in a diffuse panicle, brownish colour.

HABITAT - open places, often in sandy soil.

Aster ciliolatus (Lindley's aster)

HERB - perennial, with long creeping rhizomes, 0.2 - 1.2 m tall.

LEAVES - sharp-pointed at tip; basal and lower stem leaves with long petioles, blades broadly egg-shaped to lance-shaped, rounded or heart shaped at base, sharply serrate, often deciduous, upper leaves abruptly narrowed to the broadly winged petiole margin ciliate, often less toothed, uppermost leaves lance-shaped, sessile and entire.

FLOWERS - radiate heads, few in open inflorescence; ray flower blue, disk flowers yellow; flowers in late summer.

HABITAT - woodlands and clearings.

ASTERACEAE - Aster Family

Aster conspicuus (Showy aster)

HERB - stout, perennial with creeping rhizome, 0.3-1 m tall, strongly glandular above.

LEAVES - firm, sharply toothed, oval, mostly sessile; the lower-most ones small and soon deciduous.

FLOWERS - radiate heads, few to many in an open inflorescence; rays blue or violet, and disk flowers yellow; involucre densely glandular, flowers in late summer.

HABITAT - open woods; low to moderate elevations.

Aster foliaceus (Leafy-bracted aster)

HERB - fibrous rooted perennial from a creeping rhizome or woody base, variable in size.

LEAVES - margins smooth (mostly), lower leaves oblanceolate to obovate, with petioles, often deciduous; the middle leaves are usually with petioles, lanceolate to ovate, 5-12 cm long and 1-4 cm wide.

FLOWERS- radiate heads, 1 to many in an open cluster, rose purple to blue or violet; flowering late summer.

HABITAT - moist, often wooded places at moderate to high elevations.

ASTERACEAE - Aster Family

Aster subspicatus var. *subspicatus*
(Douglas' aster)

HERB - perennial, with elongate rhizome or thickened stem base, mostly 0.2-0.8 m tall, extremely variable species.

LEAVES - toothed, sharp-pointed at tip, without hairs; basal leaves smaller than stem leaves, often deciduous; stem leaves lance-shaped to oblong, or elliptic; lower leaves petiolate, middle or upper ones sessile and clasping.

FLOWERS - radiate heads solitary or few to several in round-topped clusters; ray flowers purple, flowers in late summer.

HABITAT - seashores, streambanks, moist woods, meadows and roadsides. Found on the coast and in the interior.

Balsamorhiza sagittata
(Arrow-leaved balsamroot, Sunflower)

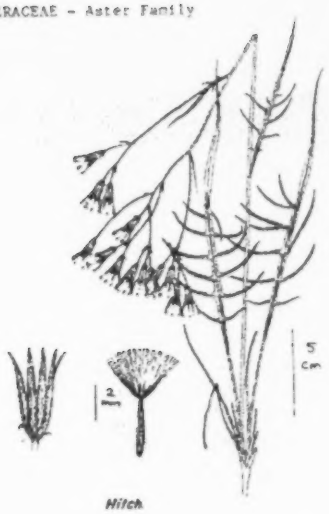
HERB - perennial with deep woody taproot and multiple woody based stems, occurring in bunches, flower-bearing stems 0.2 - 0.8 m tall.

LEAVES - basal leaves with petioles, arrow-head shaped or heart-shaped, up to 30 cm long and 15 cm wide, not toothed, silvery(especially beneath) felt-like hairs when young, become greener and smoother with age.

FLOWERS- radiate heads, yellow, solitary on stem, many heads per bunch, flowering late April to early July.

HABITAT - open hillsides and flats, in valleys and at moderate elevations.

ASTERACEAE - Aster Family



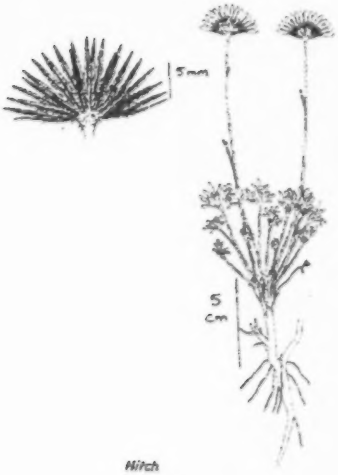
Crepis atrabarba (Slender hawk's beard)

HERB - perennial with 1 or 2 stems from a taproot, up to 70 cm tall, when stem is cut, "milky" juice is apparent.

LEAVES - gray, slightly woolly when young often hairless when older; basal leaves 1-35 cm long, pinnately lobed; upper leaves linear and entire.

FLOWERS- 3-30 radiate heads, yellow.

HABITAT - dry, open areas, both on mountains and in valleys.



Erigeron compositus (Cut-leaf fleabane)

HERB - perennial with a taproot and woody base, 3-25 cm tall.

LEAVES - densely glanduiar, hairy to almost smooth; basal leaves dissected into three sections; stem leaves few, mostly linear and not dissected.

FLOWERS- radiate heads solitary, white to pink or blue rays, yellow centre, flowering in early spring.

HABITAT - rocky or sandy areas.

ASTERACEAE - Aster Family

Erigeron corymbosus (Long-leaved fleabane)

HERB - perennial with a taproot and woody base, 10-50 cm tall, generally purplish at the base.

LEAVES - densely hairy, basal leaves 3-nerved, elongate, pointed at apex, up to 25 cm long (including petiole) and 1 cm wide; leaves on stem reduced.

FLOWERS- radiate heads, 1-16, deep blue occasionally pink, flowering usually in June and July.

HABITAT - usually in dry areas, often among sagebrush.

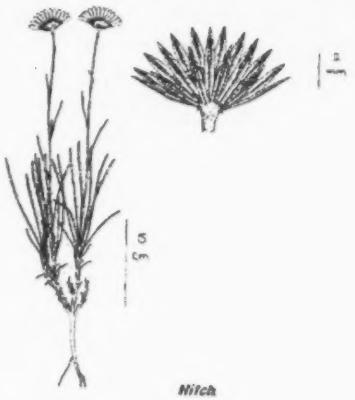
Erigeron linearis (Fine-leaved fleabane)

HERB - perennial, 5-30 cm tall, with stout taproot and branched woody stem base, the stem bases and basal leaves are hardened and stiff straw-coloured to purplish.

LEAVES - finely gray leaves with stiff short hairs, leaves are linear 1.5 - 9 cm long.

FLOWERS- radiate heads, solitary or few, yellow. Flowers in spring.

HABITAT - dry, often rocky soil, from plains and foothills to moderate mountain elevations.



ASTERACEAE - Aster Family

Erigeron peregrinus (Subalpine fleabane)

HERB - fibrous rooted perennial up to 0.7 m tall, leafy.

LEAVES - basal leaves oblanceolate, the stem leaves are more ovate and not generally reduced.

FLOWERS - radiate heads solitary or few, blue to purplish-pink, petals are toothed at the tip, flowering in late summer.

HABITAT - moist meadows, streamsides, or bogs at moderate to high elevations.

Erigeron speciosus (Showy-leafed fleabane)

HERB - perennial with a woody stem base, the stems clustered 15-60 cm tall, very leafy, generally smooth.

LEAVES - often triple nerved, the lower oblanceolate or spatulate, with petioles, mostly deciduous; the others abundant and without petioles.

FLOWERS- 1-13 radiate heads, blue (rarely white) with yellow centres, flowering in late summer.

HABITAT - open woods and openings in wooded areas, mostly in the foothills and at moderate elevations in the mountains.

ASTERACEAE - Aster Family

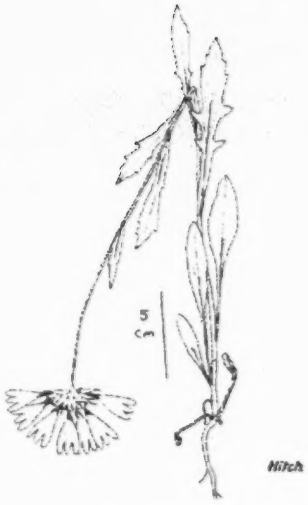
Gaillardia aristata (Brown-eyed Susan)

HERB - perennial from a slender taproot, stems 1 to several from the base, usually not branched, stem is hairy 20 - 70 cm tall.

LEAVES - narrow, linear-oblong to lance-ovate, up to 15 cm long and 2.5 cm wide, sometimes all basal, margins smooth to coarsely toothed or pinnately lobed, hairy, olive-green, variable when young.

FLOWERS- heads solitary or few, the yellow rays are deeply notched at their tips, centre is reddish-brown, flowering June to early August.

HABITAT - prairies, dry meadows and other open places, seldom ascending high in the mountains.



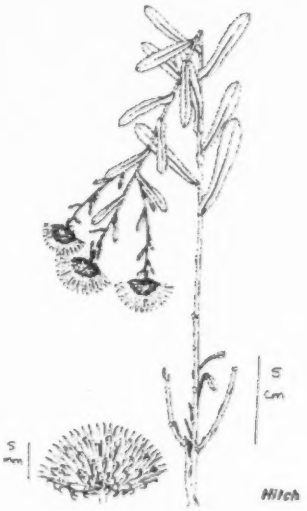
Grindelia squarrosa (Curlycup gumweed)

HERB - biennial or short-lived perennial, 0.1 - 1 m tall.

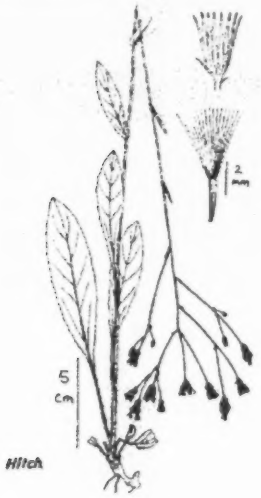
LEAVES - regularly toothed (or entire), the middle and upper leaves clasping the stems.

FLOWERS- discs 1-2 cm wide, yellow, on a rough sticky bur. The bur has 5 or 6 rows of gummy bracts which curl outwards at their tips, flowering July to early September.

HABITAT - dry open areas often in freshly disturbed sites.



ASTERACEAE - Aster Family



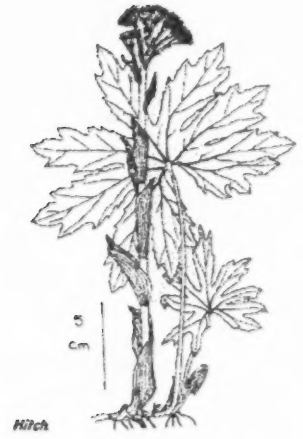
Hieracium albiflorum (White hawkweed)

HERB - 0.3 - 1.2 m tall, the stem with loose long hairs at the base, becoming smooth upwards, exudes "milky juice" when split.

LEAVES - sparsely or moderately long-haired, basal leaves persistent and often tufted, 4-17 cm long and 1.2-4.5 cm wide; the upper leaves are more reduced.

FLOWERS- white, heads are several or many, each on a slender pedicel in an open inflorescence, flowering late June to August.

HABITAT - open woods and moist or rather dry open hillsides.



Petasites palmatus (Sweet colt's-foot)

HERB - perennial.from creeping rhizomes; stem erect, 0.1-0.5 m tall.

LEAVES - basal leaves long petioled, hairy with white hairs beneath, palmately or pinnipalmately veined and lobed, serrate, expanding with or shortly after flowers; bracts on stem in shingled arrangement.

FLOWERS - inflorescence with several or numerous heads, heads bell-shaped; flowers whitish, appearing early in the year, usually before the leaves.

HABITAT - meadows, swampy places, moist woods.

ASTERACEAE - Aster Family

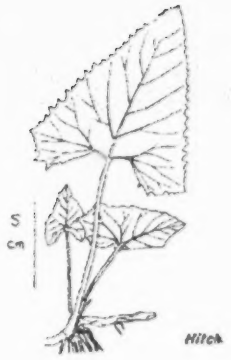
Petasites sagittatus
(Arrow-leaved colt's-foot)

HERB - plant similar to *P. palmatus*.

LEAVES - basal leaves serrate, with 20-45 teeth each side, or almost entire, pinnipalmately veined, heart-shaped or more commonly arrowhead-shaped; bracts of stem longer and narrower than *P. palmatus*.

FLOWERS - whitish.

HABITAT - found in places such as wet meadows and rich, wet marsh edges. Generally occurs on alluvial sites in the interior.



Senecio pseudaureus
(Western golden ragwort)

HERB - fibrous rooted perennial from a short, rhizome or woody stem base, 0.3 - 0.7 m tall, essentially glabrous.

LEAVES - relatively thin, the basal leaves have long petioles, the blade toothed, heart-shaped or squared off at the base; stem leaves few and reduced upwards, without petioles and pinnately toothed towards the base of the leaf.

FLOWERS - several discs, yellow with brownish heads.

HABITAT - streambanks, wet meadows, and moist woodlands in and near the mountains.

ASTERACEAE - Aster Family

Senecio triangularis
(Arrow-leaved groundsel)

HERB - several stemmed, coarse and lush perennial, 0.3-1.5 m tall.

LEAVES - numerous, narrowly triangular, strongly toothed; those near the base with long petioles, those above becoming sessile.

FLOWERS - radiate heads, few to numerous, in short, flat-topped inflorescence; ray flowers 8, yellow; disk flowers yellow; involucral bracts equal, black-tipped.

HABITAT - streambanks and moist places; moderate to high elevations.

Solidago canadensis (Canadian goldenrod)

HERB - robust perennial from creeping rhizomes 0.3-1.0 or 2 m tall, varying from shortly hairy throughout to finely hairy on the upper part of the stem.

LEAVES - basal leaves missing or similar to lower stem leaves, deciduous; other leaves are numerous and crowded, gradually reduced upwards; leaves are 3-nerved and with the exception of upper most leaves, have sharp teeth along the margins; larger leaves are 5-15 cm long and 5-22 mm wide.

FLOWERS - dense pyramid-shaped cluster of minute bright yellow flowers on the end of the main axis.

HABITAT - open places and thin woods, usually in disturbed moist soil.

ASTERACEAE - Aster Family

Solidago spathulata (Spike-like goldenrod)

HERB - perennial from a woody stem base or a short, stout, rhizome, 0.5-0.8 m tall, usually sticky or gummy involucre and flower stems.

LEAVES - basal leaves are oblanceolate to spatulate, toothed or only slightly toothed, mostly blunt or rounded tips, up to 15 cm long (including petiole) and 3 cm wide, persistent; the stem leaves are few and progressively reduced.

FLOWERS - short and compact to elongate and narrow (spike-like) inflorescence each flower having a relatively long pedicel; disc flowers, yellow, usually about 13.

HABITAT - valley and montane, scarcely alpine.

Tanacetum vulgare (Common tansy)

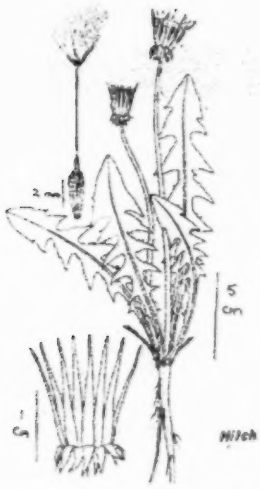
HERB - coarse aromatic, 0.4-1.5 m tall, from stout rhizome.

LEAVES - numerous, 1-2 cm long, dotted with small glandular pits; pinnatifid, pinnae pinnatified or deeply lobed, pinnules toothed, basal leaves commonly withered by flowering time.

FLOWERS - heads discoid, numerous, commonly 20-200; flat-topped inflorescence; flowers golden yellow.

HABITAT - roadsides, fields, waste places; native of Eurasia, escaped from cultivation.

ASTERACEAE - Aster Family



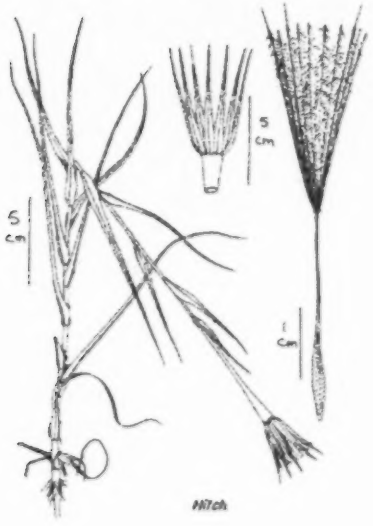
Taraxacum officinale (Common dandelion)

HERB - well known "Dandelion" that invades our lawns and other disturbed sites.

LEAVES - sparsely hairy beneath along mid-rib, otherwise smooth; leaf margins incised with the lobes directed backwards, the lobe on the end of the blade is larger than the others; blade tapers to a narrow petiole-like base.

FLOWERS - common yellow dandelion which forms a conspicuous ball of seeds.

HABITAT - lawns and disturbed sites, openings in the forest and grasslands.



Tragopogon dubius
(Yellow salsify. Goat's beard
Oyster plant)

HERB - biennial or annual, 30-100 cm tall, exudes milky juice when cut.

LEAVES - elongate, grass-like leaves, tapering uniformly from base to apex, woolly-hairy when young; clasp the stem near the base of the leaf.

FLOWERS - <u>flowering stems are evidently enlarged under the flower</u>, heads are pale-lemon-yellow and dandelion-like; the bracts are distinctly longer than the rays; forms a conspicuous ball of seeds (like dandelion).

HABITAT - roadsides and other open relatively dry places.

ASTERACEAE - Aster Family

Tragopogon pratensis
(Oriental meadow goat's beard)

HERB - mostly biennial, 15-80 cm tall, exudes "milky juice" when cut.

LEAVES - elongate up to 30 cm long and nearly 2 cm wide (often narrower), curled under at the apex, and often abruptly narrowed a little above the base.

FLOWERS - flowering stems are <u>not</u> enlarged under the flower; heads are yellow, bracts are equal or shorter than the rays.

HABITAT - roadsides, fields, and wasteplaces.

Carex aquatilis (water sedges)

SEDGES – stems 0.3–1.0 (1.5) m tall, borne singly or a few stems together arising from stout deep-seated rhizomes forming large clumps or a turf, often not fruiting.

LEAVES – elongate, flat to v-shaped, 2–7 mm wide.

INFLORESCENCE – 3–7 cylindrical spikes, not closely crowded, 1.5–5 cm long, terminal spike male, others female or mixed with male, on top; lowest bract elongate and leafy 7–25 cm long usually equaling the inflorescence; scales on female flowers reddish-brown to purplish black with a pale midrib, narrower than the fruit.

FRUIT – achene 1.2–1.5 mm long, shorter and narrower than the perigyna; perigyna strongly flattened with well developed marginal nerves only, speckled with reddish-brown on a pale coppery to greenish background.

HABITAT – in shallow water or very wet soil, often in swampy places or at the margins of lakes and ponds.

CYPERACEAE – Sedges

Carex disperma (Soft-leaved sedge)

SEDGES – soft slender plants with single to several stems arising from a system of slender rhizomes, 10–40 cm tall.

LEAVES – lower leaves reduced to scales, upper leaves flat, 1–2 mm wide all borne on the lower part of the stem, densely tufted.

INFLORESCENCE – spikes slender linear, sessile; spikelets small and few-flowered; 1–3 male flowers on top with female flowers below, female scales thin, dry and chaffy, translucent, equal or shorter than the fruiting body.

FRUIT – achene doubly-convex-shaped, perigynia many-nerved, ending in a short beak.

HABITAT – swamps, bogs, wet woods and shady meadows.

Carex nigricans (Black alpine sedges)

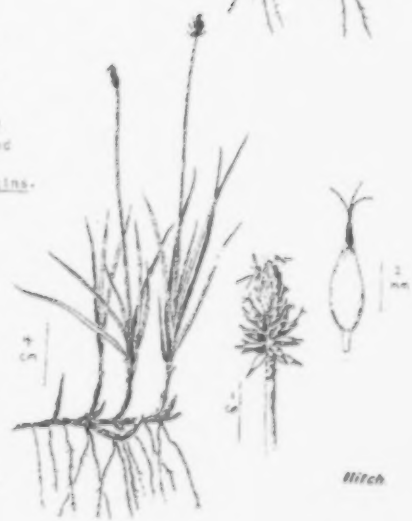
SEDGES – rhizomatous, loosely tufted, (0.5) 10 – 35 cm tall.

LEAVES – lower leaves scale-like, leaf blades numerous, 4–9 per stem, firm and flat, 4–13 cm long, 15–30 cm wide, mostly smooth with somewhat rough margins.

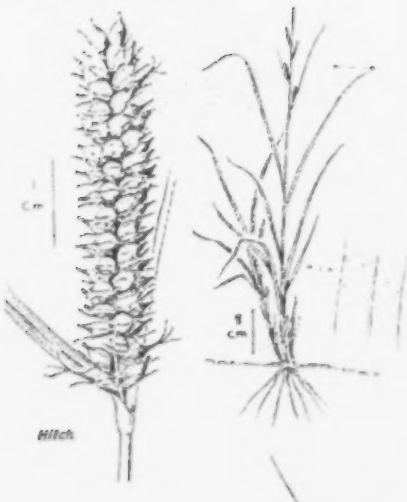
INFLORESCENCE – spike solitary, with male flowers above, female flowers below, oblong, rounded 1–2 cm long, 0.6–1 cm wide; female flowers with dark brown scales with a thin margin and a pale midrib.

FRUIT – achene 3-angled; perigynia dark brown to black at the tip and paler near the base; 3–4.5 mm long, lance-shaped to oval with pair of marginal nerves only, short-beaked.

HABITAT – meadows, stream banks, old snow patches at high elevations in the mountains.



CYPERACEAE - Sedges



Carex rostrata (Beaked sedge)

SEDGES - one of the commonest sedges; stems arising singly or few together from stout, deep seated, elongate creeping rhizomes, sometimes forming a dense sod, mostly (30) 0.5-1.2 m tall.

LEAVES - smooth with regular knobby septa on the inside of the elongate, flat blades, (2) 4-12 (15) mm wide.

INFLORESCENCE - several remote flowering spikes form an elongate, erect inflorescence with female spikes on the bottom, the lower mostly long-stalked, the others sessile; upper male spikes 2-7 cm long, 2-4 cm thick; scales on female flower straw-coloured to dark reddish brown, narrower and shorter than perigynia, pointed with a small bristle.

FRUIT - achene 3-angled; perigynia shiny, pale green with a reddish-brown tip, 8-16 nerved, 4-7 mm long with a round body and abrupt short beak.

HABITAT - in wet soil on shallow water by margins of streams, lakes and ponds, usually on organic substrates.

Carex sitchensis (Sitka sedge)

SEDGES - similar in most respects to *C. aquatilis*, but coarser, stouter and more densely clustered, up to 2.0 m tall with short or no rhizomes.

LEAVES - up to 1 cm wide, flat with revolute margins.

INFLORESCENCE - 2 or 3 elongate male spikes, 3-10 cm long, lower spikes nodding on slender stalks, elongate bracts 20-30 cm long.

FRUIT - achene enclosed by glabrous, veinless or nearly so, perigynia.

HABITAT - in shallow water or very wet soil in swamps, wet meadows and lakeshore, near the coast.

CYPERACEAE - Sedges

Eriophorum angustifolium ssp. *subarcticum*
(Many-spiked cottongrass)

SEDGES - extensively colonial from creeping rhizomes; stems 0.2-0.6 m tall.

LEAVES - basal and on stem; blade 2-6 mm wide, flat, becoming narrow and triangular or channelled toward tip; upper-most culm leaf equalling or exceeding sheath.

FLOWERS - spikelets 2-8 per inflorescence several unequal bracts beneath inflorescence, 2 or more of bracts leafy in texture, longest one surpassing inflorescence, where stems of spikelets arise from a common point; bristles numerous, white or nearly so.

FRUIT - achene blackish, 2-3 times long as wide.

HABITAT - cold swamps and bogs at moderate to high elevations in mountains.

Eriophorum scheuchzeri
(Scheuchzer's cottongrass)

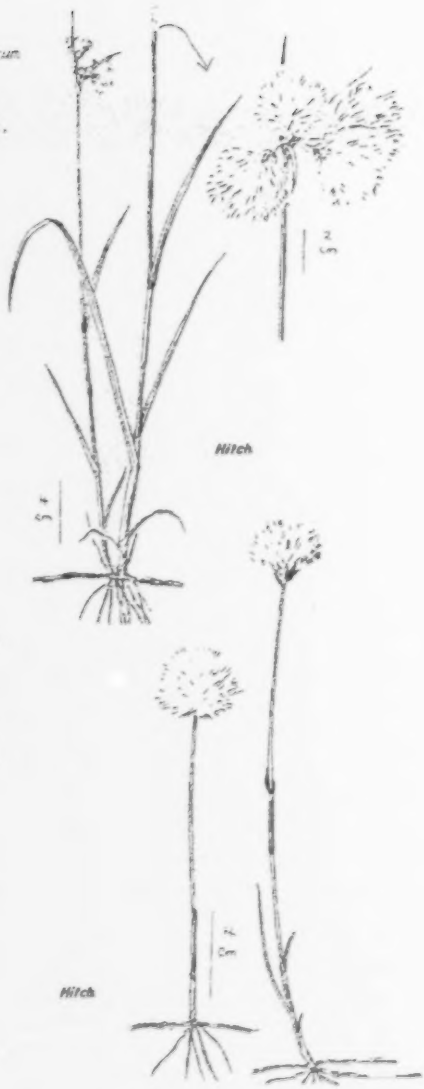
SEDGES - extensively colonial from creeping rhizomes; stems short, 0.1-0.4 m tall, solitary.

LEAVES - few, mostly borne near base, with well-developed sheath and slender, much-reduced blade which is channelled or triangular and not much greater than 1 mm wide; uppermost sheath borne below middle of culm, dark-tipped and bladeless.

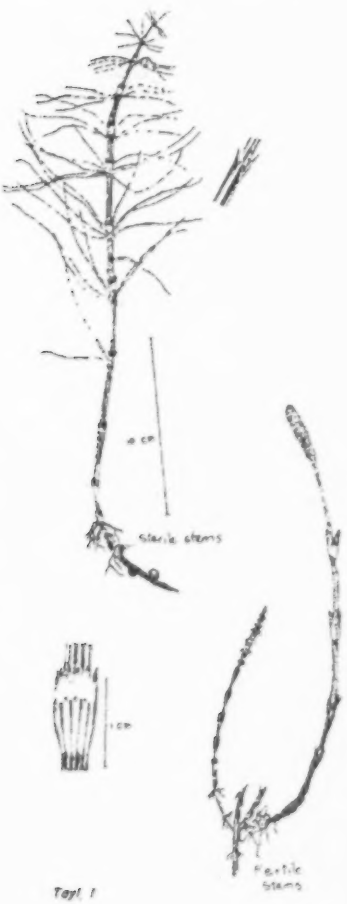
FLOWERS - spikelets solitary and terminal; bracts beneath inflorescence lacking; bristles long, woolly white or near so; several similar 1-headed cottongrass.

FRUIT - achenes brown or blackish with prominent apical tip

HABITAT - cold, wet places; boggy ground, wet meadows, riverbanks, lake and pond shores, shallow pools.



EQUISETACEAE - Horsetail Family



Text 1

Equisetum arvense (Common horsetail)

RHIZOME - extensively creeping and branched, dark-felted, tuber-bearing; (fertile and sterile stems not alike, annual, erect)

FERTILE STEMS- unbranched, usually thick and succulent, brownish to whitish, soon withering; sheaths with 8-12 large, brown, pointed teeth.

STERILE STEMS- solitary or clustered, green slender, much branched, usually with 10-12 ridges; sheaths with about 12 sharp lance-shaped brownish teeth, branch sheaths closest to the stem are large and obvious, while others are slightly flaring, somewhat appressed, and 4-6 toothed; branches numerous in dense, regular whorls, ascending or spreading, mostly unbranched, 3-4 angled, coarser than *E. pratense;* (central cavity present).

CONES - long stalked, blunt-tipped.

HABITAT - very tolerant of soil conditions, often weedy moist woods, meadows, banks roadsides and railway embankments.

EQUISETACEAE - Horsetail Family

Equisetum fluviatile (Swamp horsetail)

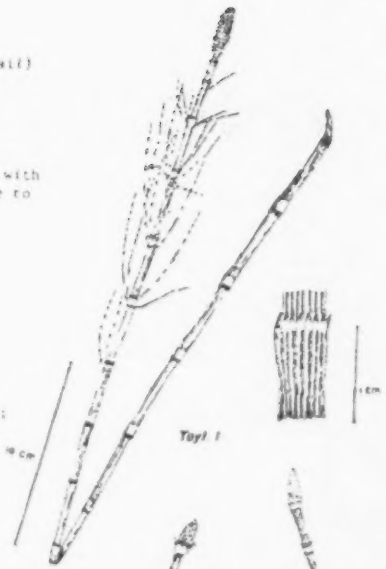
RHIZOME - widely creeping, shiny, often reddish.

STEMS - annual, all alike, base reddish, shallowly 9 to 25 ridged, with large central cavity; branches none to many and whorled.

SHEATHS - green with persistent, narrow pointed dark brown to blackish teeth.

CONES - blunt-tipped short-stalked, deciduous.

HABITAT - shallow water at edge of lakes, ponds in ditches or marshy places, in bogs, along muddy shores; from low to moderate elevations.



Equisetum hyemale (Scouring-rush)

RHIZOME - widely creeping, slender, blackish.

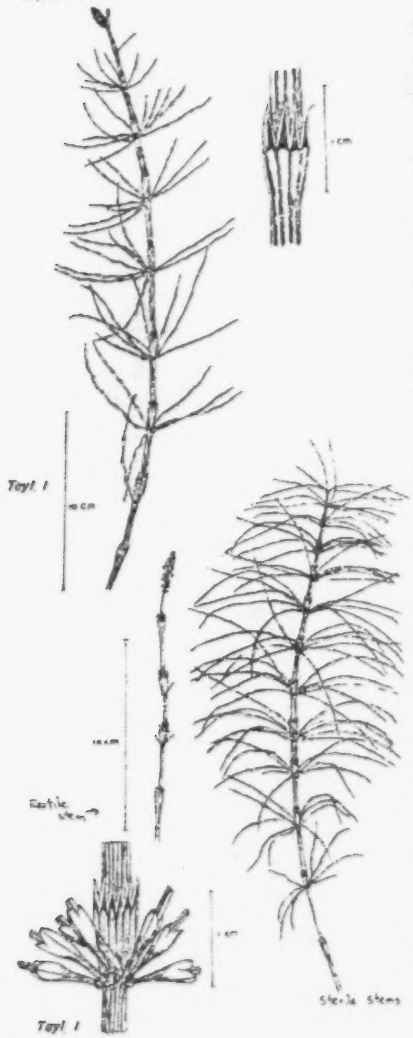
STEMS - all alike, solitary or clustered, whitish-green, evergreen, mostly unbranched, 18-40 ridges, with central cavity.

SHEATHS - with black band at tip and at base, ashy gray between bands when mature; dark brown teeth slender, thin, dry, chatty, mostly deciduous but some are irregularly persistent.

CONES - pointed, short-stalked.

HABITAT - alluvial sites, often in partial shade, streambanks, commonly in moist or wet places; from low to moderate elevations.

EQUISETACEAE - Horsetail Family



Equisetum palustre (Marsh horsetail)

RHIZOME - without hairs, shining black, creeping, somewhat branched, deeply subterranean.

STEMS - annual, all alike, up to 60 cm tall with small central cavity; branches few and irregular to numerous.

SHEATHS - green, gradually widened upwards, teeth with blackish-brown centre and broad white margin.

CONES - borne at tip of main stem, long-stalked, blunt, deciduous.

HABITAT - shallow water, wet marshy places and meadows, streambanks; from lowlands to moderate elevations in mountains.

Equisetum pratense (Meadow horsetail)

RHIZOME - black, creeping; fertile and sterile stems not alike, annual, erect.

FERTILE STEMS- usually pale and unbranched initially, later developing whorls of green, unbranched branches; sheaths pale, teeth slender, brown, white-margined.

STERILE STEMS- mostly solitary, slender, whitish-green, with 10-18 ridges; sheaths pale green with slender, brown, white-margined, triangular teeth; branch sheaths closest to the stem are quite small and inconspicuous, while others are loose, flaring, and 3-toothed; branches numerous, regularly whorled, very slender, 3-angled, not branched; central cavity present.

CONES - long-stalked, blunt-tipped, and soon withering.

HABITAT - grassy banks, edges of damp woods, streambanks, thickets; generally indicates nutritionally rich, moist sites with neutral pH.

EQUISETACEAE - Horsetail Family

Equisetum scirpoides (Dwarf scouring-rush)

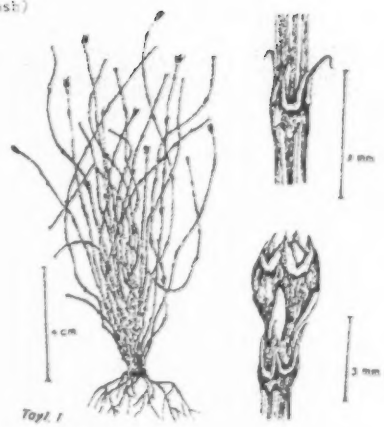
RHIZOME - creeping, shallow, thread-like, widely branched.

STEMS - all alike, evergreen, small and slender, without central cavity.

SHEATHS - enlarged and darkened upwards, short, with broad, black band above green base; teeth 3, thin, usually with thin transparent margins and a darker middle band.

CONES - black, sharp-pointed, nearly stalkless, small.

HABITAT - open springy banks; damp coniferous woods, thickets and often in swampy places.



Tayl. 1

Equisetum sylvaticum (Wood horsetail)

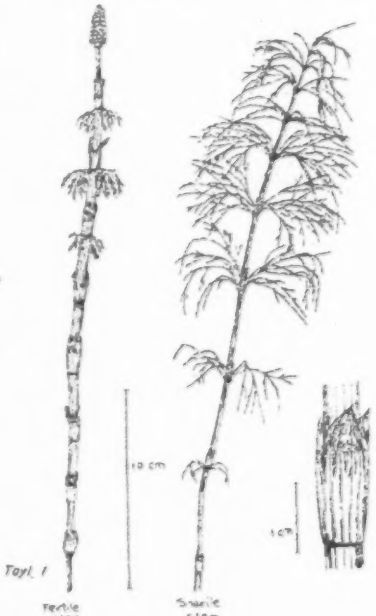
RHIZOME - creeping, deep in ground; (fertile and sterile stems not alike; annual, erect).

FERTILE STEMS - shorter, green to flesh-coloured initially without branches but later producing whorls of green, compound branches; commonly with longer sheaths and teeth than sterile stems.

STERILE STEMS - green, mostly solitary, 10-18 ridged; sheaths green at base, chestnut-brown above, teeth persistent and irregularly coherent into 3-5 broad, brown lobes; branches numerous, regularly whorled, drooping at the ends, mostly compound branched, central cavity present.

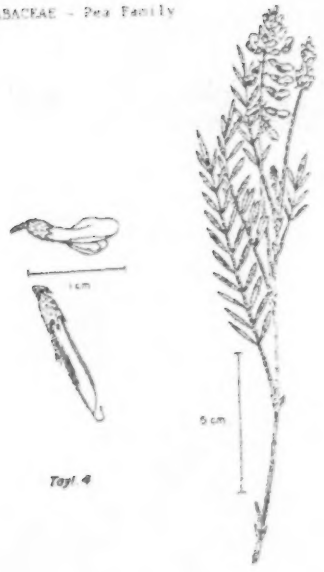
CONES - blunt-tipped, long stalked, soon withering.

HABITAT - cool, moist, somewhat open woods, in mildly acidic soils, also in wet meadows, marshes and on streambanks.



Tayl. 1

FABACEAE - Pea Family



Topt 4

Astragalus miser (Timber milk vetch)

HERB - tufted perennial with woody taproot and very branched woody base, thinly to densely hairy, stems numerous; decumbent or ascending up to 40 cm tall.

LEAVES - less than 20 cm long, with slender petioles, made up of 7-21 leaflets; leaflets are needle-like to broadly oval, the terminal leaflet commonly longer than the adjacent pair.

FLOWERS - Raceme of 2 to 20 "pea-like", white, yellowish to bluish or lilac flowers.

FRUIT - pod pendulous, up to 2.5 cm long.

HABITAT - grasslands and foothills to above timberline in the mountains, in moist meadowland to open dry ridges.

NOTE: *A. canadius* is similar except it is less hairy, flowers are white, the pods have longer stipes and the plant is more robust.

Topt 4

Astragalus purshii (Pursh's milk vetch)

HERB - tufted, grayish woolly perennial from a taproot and a branched crown, matted, the stems often prostrate, 5-10 cm long.

LEAVES - closely crowded, 2-15 cm long with white hairs, 7-19 leaflets, leaflets are elliptic or oblong to obovate, rounded to acute apex, 5-20 mm long, woolly; stipules at base of leaf petiole are not connate.

FLOWERS - in racemes of 3-10 flowers, yellow or creamy to deep red-purple, "pea-like" flowers, the keel is shorter than the wings.

FRUIT - pod, leathery, grayish-woolly, flattened.

HABITAT - prairies and sagebrush.

NOTE: Similar to *Oxytropis campestris*.

FABACEAE - Pea Family

Lathyrus nevadensis
(Nuttall's pea, Purple pea)

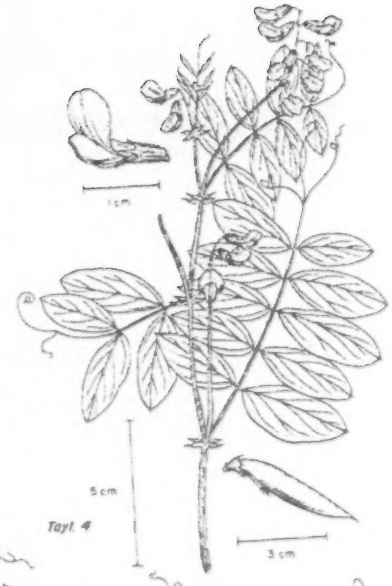
HERB - perennial with creeping rootstock and erect to clambering angled stems, 0.15 - 0.8 m tall.

LEAVES - with 4-10 leaflets, 2-12 cm long, hairy on under surface, veins branched; stipules narrow, linear to lance-shaped; tendrils present.

FLOWERS - in 2-7 flowered racemes, bluish-purple to mauve-red.

FRUIT - a hairless pod.

HABITAT - open woods.



Lathyrus ochroleucus
(Cream-flowered pea)

HERB - perennial with rootstock and more or less angled stems; 0.3 - 0.8 m tall.

LEAVES - with mostly 6 leaflets and well developed tendrils, leaflets to 7 cm long, without hairs, veins are branched; stipules broad, oval shaped.

FLOWERS - in racemes of 6-15 "pea-like" flowers, white to yellowish-white.

FRUIT - a hairless pod.

HABITAT - open woods and rocky slopes. A typically interior species with a similar habitat, but less cover than *L. nevadensis*.

NOTE: Compare with *Vicia americana*.

FABACEAE - Pea Family

Lupinus arcticus (Artic lupine)

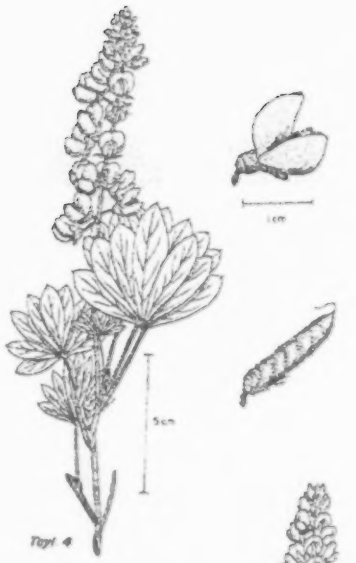
HERB - perennial with several stems arising from a branched rootstock; stems to 60 cm tall, slender, hollow, long-hairy.

LEAVES - mostly arising from near the rootstock; 6-8 leaflets with sharp, pointed tips, hairy on under surface; longest petioles mostly basal.

FLOWERS - several, bluish, in an elongated cluster; typical legume flower.

FRUIT - hairy (legume) pod.

HABITAT - mostly open ground; very common in B.C. Occurs on roadsides, in alpine meadows and open subalpine forests.



Tayl. 4

Lupinus sericeus (Silky lupine)

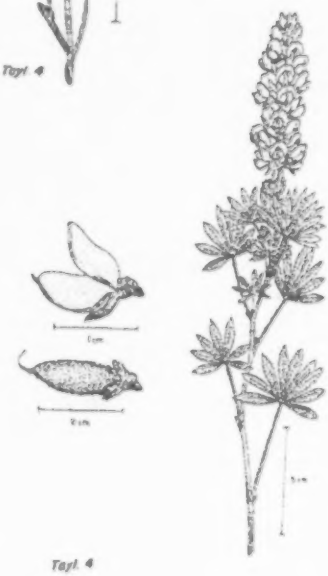
HERB - perennial with branching woody base, 1 to several stems up to 0.6 m tall, very silky hairy, silvery.

LEAVES - basal leaves and stem leaves are present when plant is flowering, lower petioles are as much as 3 times as long as the longest leaflet; 5-9 leaflets per leaf, the longest leaflet 6 cm, oblanceolate, sharp tip, silky hairy on both sides.

FLOWERS - loose raceme 10-15 cm long, lavender, blue, (yellowish or whitish).

FRUIT - pods about 3 cm long, very silky hairy.

HABITAT - open areas east of the coastal mountains, lower elevations.


Tayl. 4

FABACEAE - Pea Family

Oxytropis campestris (Field locoweed)

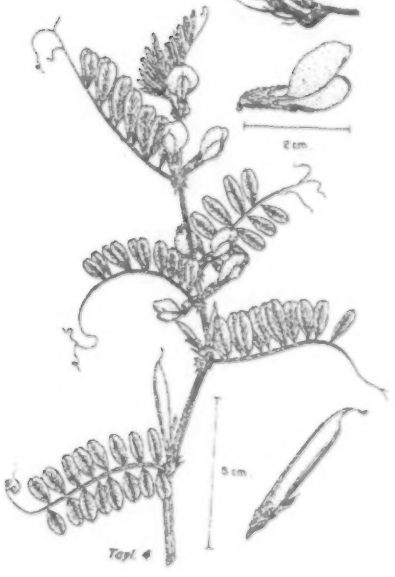
HERB - tufted perennial, 5-30 cm tall, variable in hairiness.

LEAVES - 7 to numerous leaflets, scattered, opposite, sometimes in pairs.

FLOWERS - flowering stems decumbent to erect, usually less than 30 cm long; raceme 5-30 flowered, head-shaped to oblong, white to yellowish, sometimes with a purple keel.

FRUIT - pod 1-2.5 cm long, sessile.

HABITAT - more or less circumboreal, montane to submontane in our area.



Vicia americana (American vetch)

HERB - perennial, trailing or climbing, naked to hairy stems 0.15-0.80 m tall.

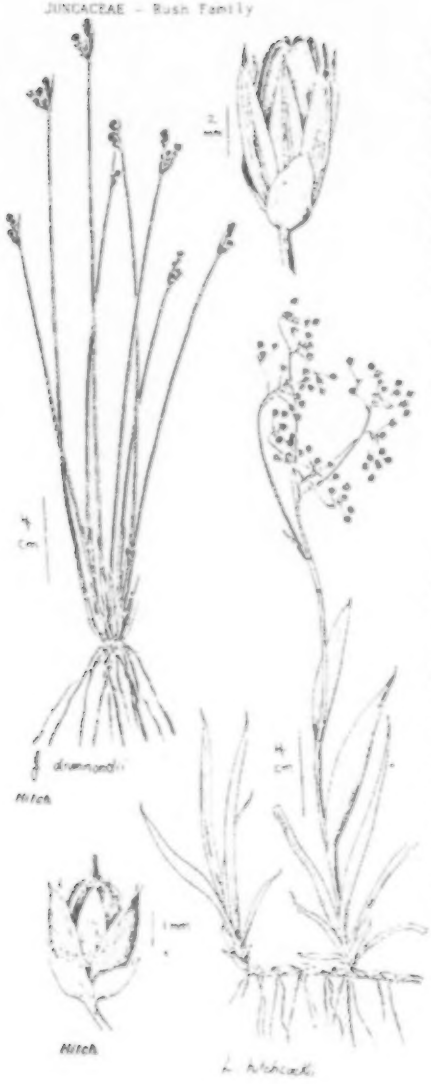
LEAVES - simple or branched tendrils; with 8-18 leaflets, leaflets to 35 mm long, veins not branched.

FLOWERS - in loose raceme of 3-9 pea-like flowers, bluish-purple to reddish purple.

FRUIT - glabrous pod.

HABITAT - fields, thickets, and open woods.

JUNCACEAE - Rush Family



Juncus drummondii (Drummond's rush)

RUSH - tufted perennial with numerous cylindrical flowering stems, forming small mats.

LEAVES - all basal, reduced to sheaths 2-6 cm long, or with short bristle-like blades. Upper most leaf has apiculation on back of leaf.

FLOWERS - Inflorescence lateral, commonly surpassed by a cylindrical bract. Flowers are borne singly, 1-3 per inflorescence.

FRUIT - small ellipsoid seeds.

HABITAT - Alpine to subalpine meadows, streambanks, talus slopes and ridges.

Luzula hitchcockii (Smooth woodrush)

RUSH - rhizomatous perennial, 0.2 to 0.5 m tall.

LEAVES - basal leaves more or less erect; leaves of flowering culm short, rather wide, "succulent" and erect.

FLOWERS - a nodding to rather erect, loose panicle, with reddish-brown flowers borne singly; bracts brownish, strongly lacerate, anthers are longer than the filaments.

FRUIT - reddish-brown capsule.

HABITAT - common alpine and subalpine parkland species through all but the very wettest climates.

NOTE: *L. parviflora* is similar but is more tufted, the leaves are longer and more lax and the inflorescence is green-yellow to brown; common in ICH zone and moist ESSF.

LILIACEAE - Lily Family

Allium cernuum (Nodding onion)

LILIES - slender stem, somewhat angled up to 50 cm tall with bulb (onion) with scaly outer coat and typical onion odor.

LEAVES - linear, flattened towards the apex, channelled below, often keeled (central rib projects), shorter than flowering stalk.

FLOWERS - many flowered umbel (flower cluster where all pedicels of flowers arise from the same point) nodding, pink or white, flowers bell-shaped.

FRUIT - 3 lobed capsule.

HABITAT - dry woods, dry open grassy places.

NOTE: Compare with *Zygadenus* spp.

Clintonia uniflora (Queen's cup)

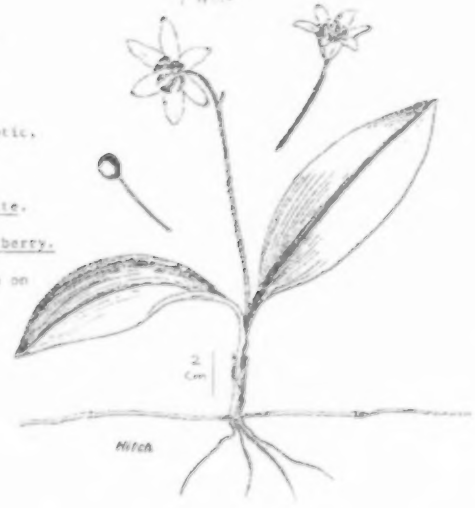
LILIES - perennial herb, widely rhizomatous.

LEAVES - 2-3 basal oblong or elliptic, slightly fleshy, noticeably hairy margin.

FLOWERS - solitary (rarely 2), white.

FRUIT - lone bright metallic blue berry.

HABITAT - coniferous forest, often on moist soils, to 1525 m elevation. Widespread throughout the coastal and interior zones.



LILIACEAE - Lily Family

Disporum hookeri (Hooker's fairybells)

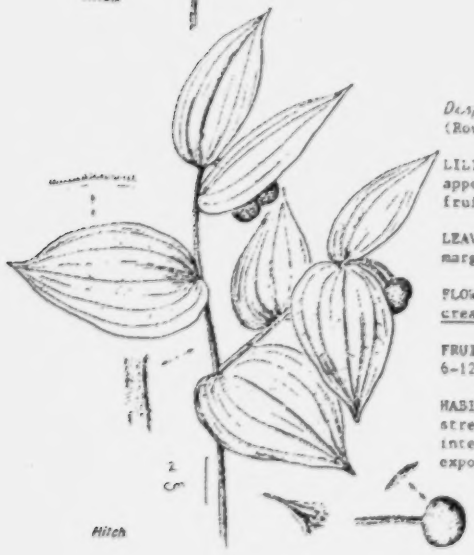
LILIES - rhizomatous perennial herb with stems sparingly branched.

LEAVES - oval-elliptic, hairy beneath, slightly so above, marginal cilia pointing forward.

FLOWERS - 2-3 per branch, narrowly bell-shaped, creamy white.

FRUIT-red berry, 4-6 seeded.

HABITAT - wooded areas, usually where moist, often in deep shade. Widespread below 55°N latitude, coast and interior.



Disporum trachycarpum
(Rough-fruited fairybells)

LILIES - Similar to *D. hookeri* in appearance; differing in leaf and fruit characteristics.

LEAVES - not hairy on upper surface, marginal cilia not pointing forward.

FLOWERS - 1-2 narrowly bell-shaped, creamy white.

FRUIT - red berry, with velvet texture, 6-12 seeded.

HABITAT - wooded slopes, often near streams or in aspen groves. A typically interior species found on drier more exposed sites than *D. hookeri*.

LILIACEAE - Lily Family

Erythronium grandiflorum
(Yellow glacier lily)

LILIES - perennial with slender to stout stems 0.2 - 1 m tall, growing from a long, slender corm (bulb-like).

LEAVES - 10-20 cm long, oblong-elliptic and acutish at apex, with a narrowly winged petiole.

FLOWERS - usually a single flower, petals lanceolate, acuminate, strongly curved back, yellow, anthers red.

FRUIT - capsule obovoid, 3 cm long, 1 cm broad.

HABITAT - open alpine and subalpine areas, also along avalanche paths to lower elevations.

Fritillaria lanceolata (Chocolate lily)

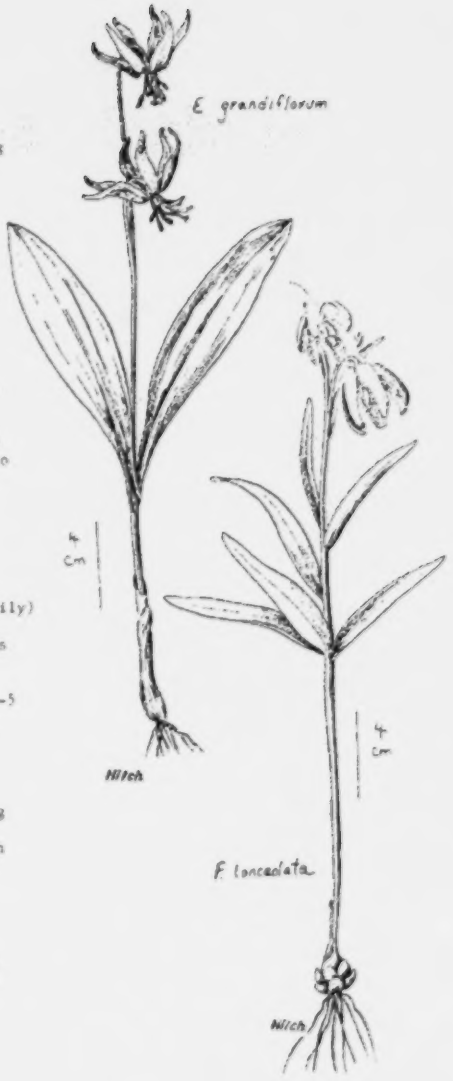
LILIES - with slender to stout stems 0.15 - 0.6 m tall.

LEAVES - mostly 1 or 2 whorls of 3-5 leaves and scattered upward; leaves linear to commonly lanceolate or ovatelanceolate 3-15 cm long, 1-25 cm broad.

FLOWERS - single or from 2-5 on long pedicels, pendent, bell-shaped, purplish, yellow mottled to greenish and purple mottled.

FRUIT - capsule about 2 cm long, broadly winged on the angles.

HABITAT - damp grassy places in the open, and in drier areas restricted to *Populus tremuloides* stands.



LILIACEAE - Lily Family

Fritillaria pudica
(Yellowbell Fritillary)

LILIES - perennial with slender to stout stems 10-30 cm tall; bulb has few large scales and many rice-grain bulblets.

LEAVES - 2 leaves which are sub-opposite, or more than 2 alternate or semi-whorled leaves; leaves linear to oblanceolate 3-16 cm long, 3-12 mm broad.

FLOWERS - solitary or occasionally 2, pendent, narrowly bell-shaped, yellow often purplish or brownish streaked near the base, fading to red or purple.

FRUIT - capsule, obovate to oblong, 18 mm long, erect.

HABITAT - well drained flats and slopes grasslands and sagebrush desert to ponderosa pine or mixed coniferous forests.

Lilium columbianum
(Tiger lily, Columbia lily)

LILIES - sturdy stem 60-120 cm tall; smooth; with a bulb 3-5 cm in diameter, ovoid, with white lanceolate, thick, closely appressed scales.

LEAVES - lanceolate to elliptic, 4-10 cm long, up to 3 cm broad, in whorls of 6-9 or the upper ones scattered.

FLOWERS - 2-20, racemose, some whorled petals (tepals) 4-6 cm long, 8-12 mm broad, yellow-orange to reddish-orange, spotted with deep red or purple, strongly bent backwards.

FRUIT - cylindric capsule, 3-4 cm long.

HABITAT - damp open woods and meadows.

LILIACEAE - Lily Family

Maianthemum canadense
(Wild lily-of-the-valley)
(Canadian mayflower)

LILIES - Low herb, creeping by slender branching rhizomes; stems erect, 5 to 20 cm tall.

LEAVES - 1-3 stem leaves, alternate; leaf blades egg-shaped to lance-shaped, heart-shaped at base; leaves hairy below, with teeth (cilia) along lower edge.

FLOWERS - inflorescence many flowered, flower stems closely clustered; perianth segments cream to white becoming bent backward.

FRUIT - pale red berry.

HABITAT - moist woods.

Maianthemum dilatatum
(False lily-of-the-valley)

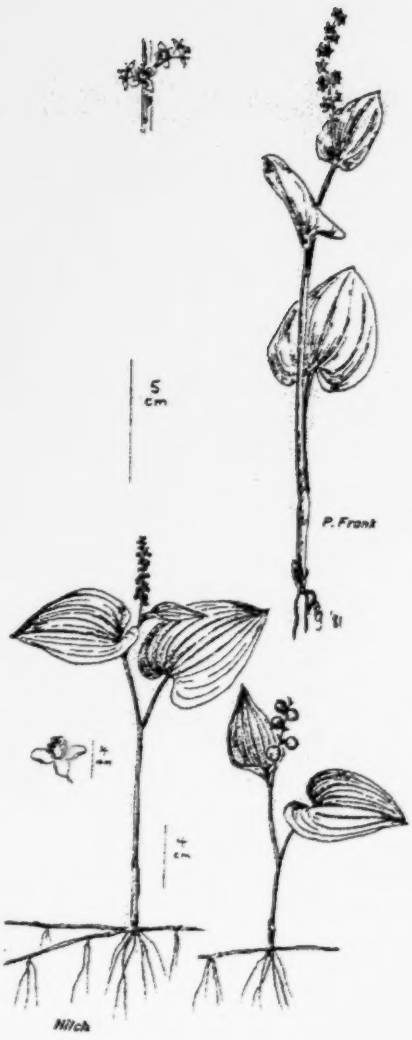
LILIES - widely rhizomatous perennial herb with erect, leafy, unbranched flowering stems, 10 - 35 cm tall.

LEAVES - mostly 2, sometimes 1 or 3, heart-shaped, glabrous below, distinctly petioled, distinctly lack teeth (cilia) along lower edges.

FLOWERS - white, in an elongated inflorescence.

FRUIT - red berry.

HABITAT - shaded or moist streambanks, open to dense moist woods.



LILIACEAE - Lily Family

Smilacina racemosa (False Solomon's-seal)

LILIES - perennial herb; flowering stem simple, 0.3 - 0.9 m tall.

LEAVES - alternate, sessile or nearly so, with clasping base, finely hairy, oval-oblong.

FLOWERS - numerous, white, in a branched, terminal inflorescence.

FRUIT - reddish berries; not palatable.

HABITAT - moist woods and streambanks to open forests.

Smilacina stellata
(Star-flowered Solomon's-seal)

LILIES - perennial herb; flowering stem simple 0.2 - 0.6 m tall.

LEAVES - alternate, sessile, narrow oblong-lance-shaped.

FLOWERS - creamy white, in short, few-flowered inflorescence (raceme).

FRUIT - berry, greenish-yellow becoming blackish.

HABITAT - moist woods and streambanks to rocky, well drained, often exposed hillsides.

LILIACEAE - Lily Family

Stenanthium occidentale
(Western mountainbells)

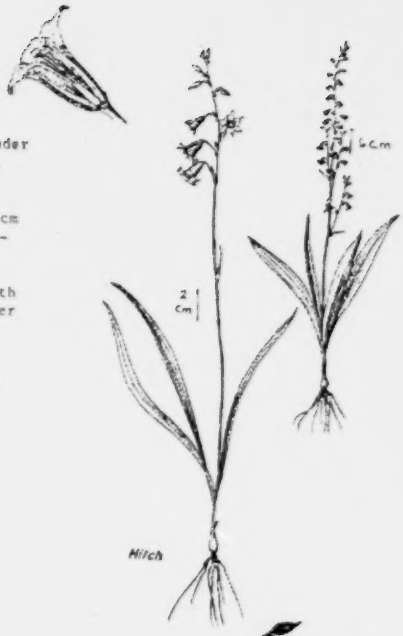
LILIES - perennial with smooth slender stem 0.1-0.4 m tall; bulb is ovoid, 1-2 cm long, scaly.

LEAVES - mainly basal leaves 15-30 cm long 3-15 mm wide, linear to oblanceolate with a sheathing base.

FLOWERS - erect terminal raceme, with narrow bell-shaped flowers on slender pedicels, flowers are greenish or brownish-purple about 14 mm long.

FRUIT - an erect capsule up to 2 cm long including the slender beaks.

HABITAT - damp wooded slopes to subalpine elevations.



Streptopus amplexifolius
(Clasping-leaved twistedstalk)

LILIES - perennial herb with stems freely branched, 0.5 -1.0 m with thick rigid hairs on lower part of stem.

LEAVES - oval-oblong, pointed, clasping, lacks teeth on leaf margins.

FLOWERS - white with greenish-tinge: flower stem jointed or "twisted", with a single flower.

FRUIT - yellow to red, many seeded, oblong berry.

HABITAT - moist forest, streambanks and mountain thickets. Generally found on moist sites. Widespread throughout coastal and interior zones.

LILIACEAE - Lily Family

Streptopus roseus (Rosy twistedstalk)

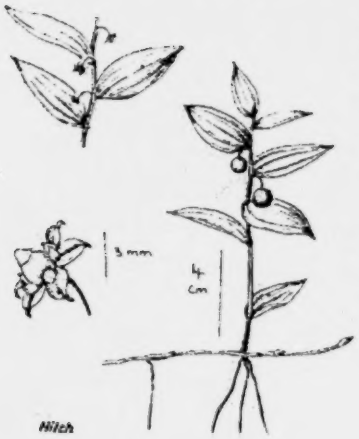
LILIES - perennial herb with stems mostly simple, 15-30 cm tall, sparsely hairy-fringed at the nodes.

LEAVES - mostly oval-elliptic, cilia-toothed margin.

FLOWERS - bell-shaped, white or greenish yellow to rose, streaked or spotted with reddish-purple, commonly 1 per flowering stem.

FRUIT - red berry, oblong, several seeded.

HABITAT - streambanks, damp montane woods and montane meadows. Widespread on mesic and wetter, moderately rich sites.



Streptopus streptopoides
(Small twistedstalk)

LILIES - herbs, 10-20 cm tall, from creeping rootstock; stem simple coarsely fringed-hairy at nodes opposite leaf blade.

LEAVES - egg-shaped-lance-shaped to oblong-lance-shaped, sharp pointed at tip.

FLOWERS - solitary, axillary, flower stem slender, petals curved backward; perianth greenish strongly purple-tinged, spreading and saucer-shaped.

FRUIT - berry red, few-seeded.

HABITAT - dense, coniferous, and montane woods.

LILIACEAE - Lily Family

Veratrum viride
(Green false hellebore)

LILIES - tall perennial with simple stem, 1-2 m tall.

LEAVES - oblong-elliptic, coarsely veined, clasping.

FLOWERS - yellow-green to deep green, in thin, branched, drooping spikes.

FRUIT - capsule, oblong to ovoid-shaped, straw-coloured to dark brown.

HABITAT - wet thickets, swamps, lowlands to montane meadows, usually at subalpine elevations, and wet meadows.

Tayl.

Zigadenus elegans
(Elegant death-camas)

LILIES - stems 0.15-0.7 m tall, with few leaves, smooth; the bulb is ovoid, tapering, up to 3 cm long with membranous scales, without onion odour.

LEAVES - mainly basal but on the stem, keeled, 5-15 mm wide, the lower leaves up to 3 cm long, distinctly veined, the upper much shorter, grass-like.

FLOWERS - open simple or compound raceme, loosely flowered, 6-15 cm long; flowers greenish or yellowish-white on pedicels 3-6 cm long.

FRUIT - oblong-ovoid capsule, 1.5-2.0 cm long.

HABITAT - damp meadows and open woods.
*Slightly poisonous to stock.

NOTE: Sheath around bulb breaks up.

Hitch

LILIACEAE - Lily Family

Zygadenus venenosus (Death camas)

LILIES - perennial herb with slender stem arising from membranous coated bulb, stem up to 0.6 m tall; the bulb is ovoid, 2-3 cm long, outer scales blackish, without onion odour.

LEAVES - several leaves linear, channelled, with finely scabrous margins, the stem leaves often more than two and without the sheathing base.

FLOWERS - a many flowered raceme, occasionally more open towards the bottom; flowers are creamy-white, smaller flower than *Z. elegans*.

FRUIT - cylindrical capsule, 1.2 - 1.5 cm long.

HABITAT - wet meadows or rocky ledges wet in the spring. *Poisonous, especially the bulbs and seeds.

NOTE: Compare with *Allium cernuum*

LYCOPODIACEAE - Club-Moss Family

Lycopodium alpinum (Alpine club-moss)

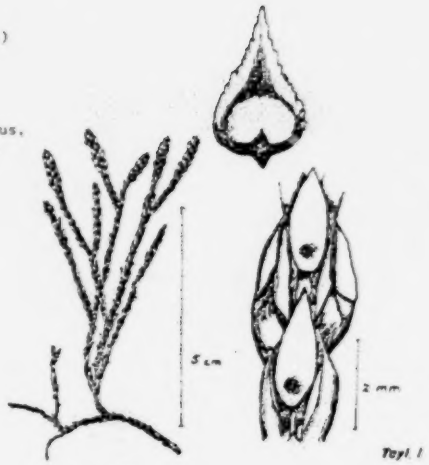
HORIZONTAL STEM - creeping near surface of ground.

ERECT STEM - whitish, tufted, numerous, dichotomously branched, to 8 cm tall somewhat flattened.

LEAVES - 4-ranked; the dorsal ones lance to awl-shaped, the ventral shorter, trowel-shaped, marginal leaves lance-shaped, appearing concave.

CONES - stalkless, solitary.

HABITAT - alpine and subalpine meadows, cool woods at high altitudes.



Lycopodium annotinum (Stiff club-moss)

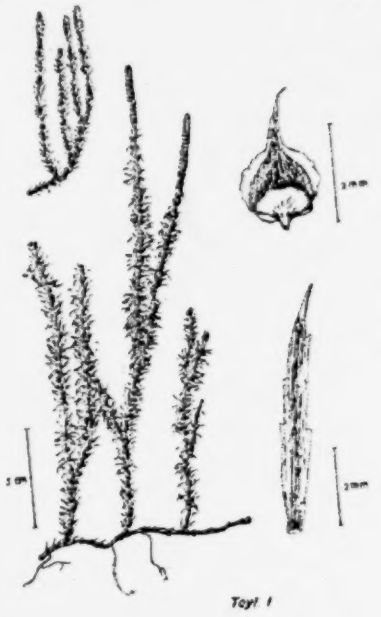
HORIZONTAL STEM - trailing on or near surface prostrate or sometimes arching, elongate, irregularly rooting, leafy. Rhizomes shallow.

ERECT STEM - simple or once to twice forked, leafy.

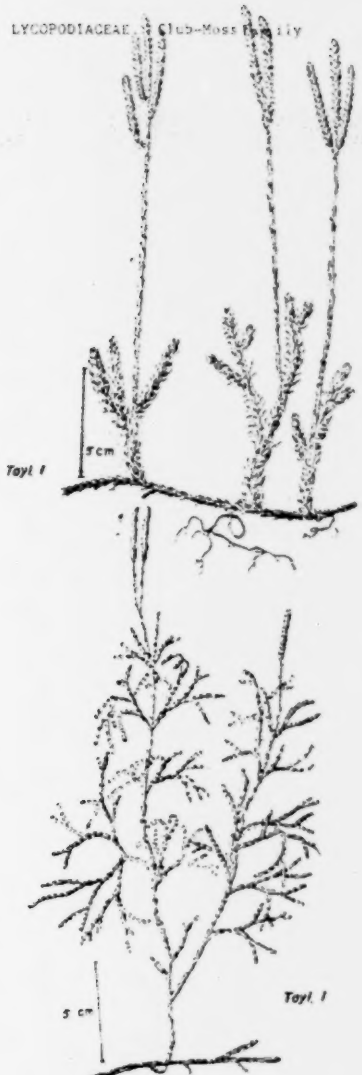
LEAVES - firm, shiny, with a short, stiff pointed tip, 8-ranked, tending to be whorl-like, often spreading.

CONE - stalkless, one per branch, borne at the tips of some or all the erect stems, clearly differentiated from stem.

HABITAT - acid soils of wet woods or bog margins, occasionally on more open, rocky slopes below timberline.



LYCOPODIACEAE - Club-Moss family



Lycopodium clavatum (Running club-moss)

HORIZONTAL STEM - on surface of ground, prostrate or arching, elongate, irregularly rooting, leafy.

ERECT STEM - simple at first, then dichotomously forked, erect.

LEAVES - bright green, tipped with a soft white bristle, long and narrow, somewhat lance-shaped.

CONE-on long stock, one to five per stalk.

HABITAT - can occur in dense woods and bogs, mesic to dry woods and rocky places.

Lycopodium complanatum (Ground-cedar)

HORIZONTAL STEM - wide creeping, on or near ground surface.

ERECT STEM - much branched, whitish-green, to 35 cm tall, noticeably flattened. Foliage similar to a cedar tree.

LEAVES - the dorsal ones large with an elevated base, the ventral ones awl-shaped, small (0.1 cm or less), marginal leaves lance to awl-shaped.

CONES - usually more than one on forked stalks.

HABITAT - woods and rocky hillsides in acid soils.

LYCOPODIACEAE - Club-Moss Family

Lycopodium obscurum (Ground-pine)

HORIZONTAL STEM - rhizome deep below the ground surface.

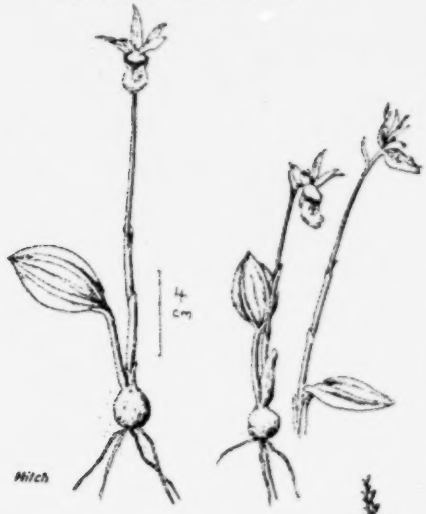
ERECT STEM - unbranched near base then numerously, bushy-forked above, "tree-like".

LEAVES - numerous, sharp-pointed 6-ranked.

CONES - solitary, stalkless.

HABITAT - acid soils of clearings, damp woods and bog margins. Less common than *L. annotinum* or *L. clavatum*.

ORCHIDACEAE - Orchid Family



Calypso bulbosa (Fairyslipper)

ORCHID - herb, 5-20 cm tall; corm egg-shaped.

LEAVES - single leaf produced at top of corm in fall and persistent through winter, withering in summer; broadly egg-shaped, mostly 3-6 cm long.

FLOWERS - single; sepals and 2 petals alike, magenta with 3 deeper coloured veins; lip hanging downward, somewhat longer than perianth segments, whitish to yellowish-purple or reddish-purple, variously spotted on flanged appendage and streaked inside sac with brownish purple.

HABITAT - mostly in shade of cool, moist forests, in soil rich with decaying leaves and wood; from near sea level to mid-montane. Widespread throughout B.C.

Corallorhiza maculata (Spotted coralroot)

ORCHID - perennial, saprophytic herb, 20-40 cm tall; with coral-like roots; purplish to reddish-brown, or often light yellow stems.

LEAVES - thin, semi-transparent sheaths.

FLOWERS - 10-30, reflexed; sepals reddish-purple, 3-nerved; petals pinkish with wine-red spots, lip white and spotted.

HABITAT - moist to fairly dry woods, common on the coast and in the interior.

ORCHIDACEAE - Orchid Family

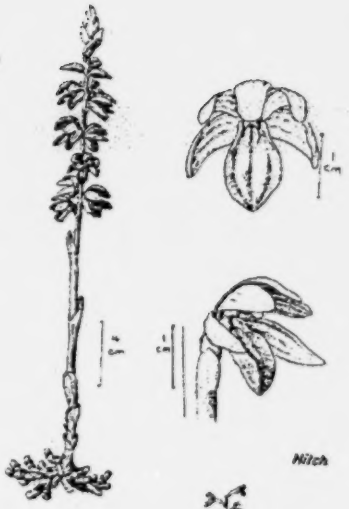
Corallorhiza striata (Striped coralroot)

ORCHID - herb, 15-40 cm tall; stems purplish-tinged, stout.

LEAVES - thin, semi-transparent sheath.

FLOWERS - 7-30, pink to yellowish-pink with 3 reddish-brown to purplish stripes on the sepals.

HABITAT - in deep coniferous to deciduous forests.



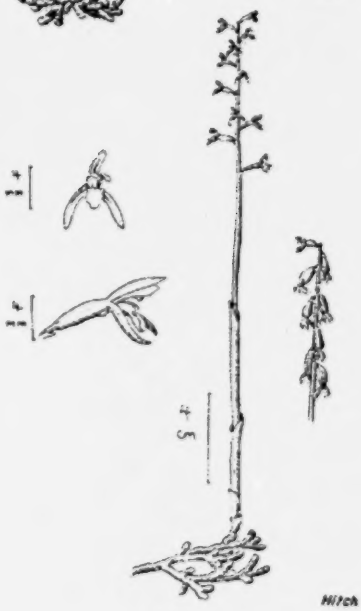
Corallorhiza trifida (Yellow coralroot)

ORCHID - herb, pale yellow to olive-yellow, 10-25 cm tall, with 2-5 sheathing bracts; rhizome coral-like.

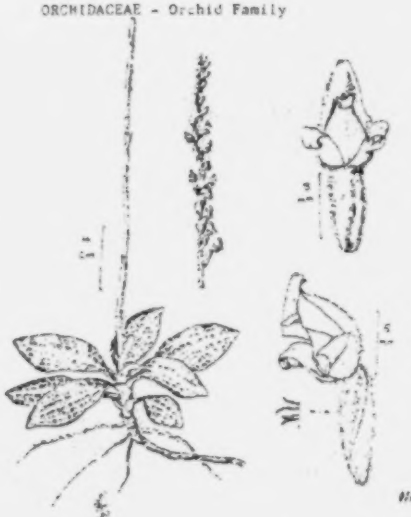
LEAVES - thin, semi transparent sheaths.

FLOWERS - 3-15, perianth segments yellow or greenish-yellow to nearly white; lip nearly white, sometimes lightly red-spotted.

HABITAT - usually in moist woods or bogs, montane to subalpine.



ORCHIDACEAE - Orchid Family



Goodyera oblongifolia
(Western rattlesnake plantain)

ORCHID - glandular-hairy, evergreen, perennial herb, 25-40 cm tall.

LEAVES - basal, in a rosette, thick, dark green, mottled or striped with white, especially along midrib, oval-lance-shaped, 3-7 cm long.

FLOWERS - many dull, white to greenish in elongated inflorescence, with most of the flowers oriented to one side.

HABITAT - dry to mossy or damp, open to dense forest in poor to medium-submesic-mesic coniferous forest in both coastal and interior sites.

Goodyera repens
(Northern rattlesnake plantain)

ORCHID - perennial evergreen herb, 10-15 cm tall, generally less robust than G. *oblongifolia*.

LEAVES - oval-lance-shaped, midrib not white, 1.5 - 3 cm long.

FLOWERS - white or pale greenish, in elongated inflorescence with all the flowers oriented to one side.

HABITAT - mossy to open and somewhat dry woods, interior zones only, not reported on the coast.

ORCHIDACEAE - Orchid Family

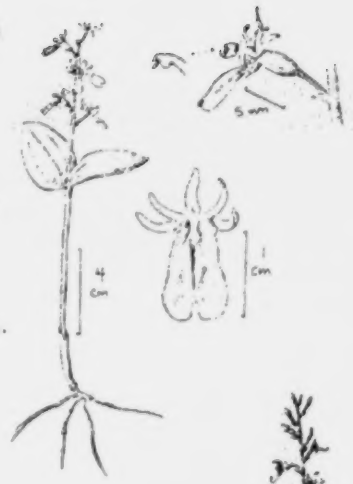
Listera borealis (Northern twayblade)

ORCHID - small herb, 7-25 cm tall, stem glabrous.

LEAVES - 2, nearly opposite to 1 cm apart, oval-elliptic, sessile, above midlength of stem.

FLOWERS - 3-15, grayish-to yellowish-green, in an open to congested, elongated inflorescence; lip oblong-oval, broadest at tip, shallowly bilobed, hairy.

HABITAT - moist woods, often in moss along streams, especially in mountains.



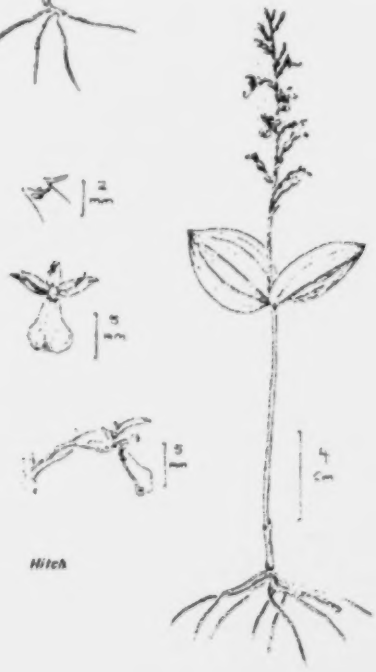
Listera cordata (Western twayblade)

ORCHID - herb 10-15 cm tall, stem smooth below leaves but strongly glandular-hairy above.

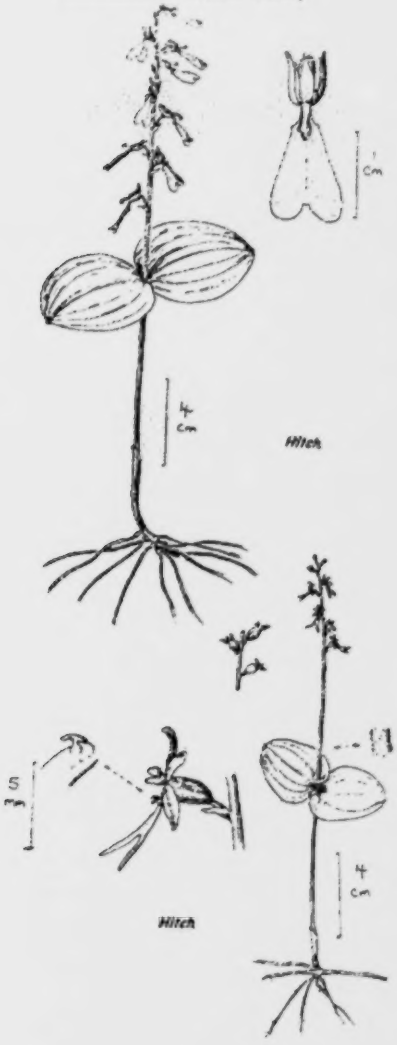
LEAVES - 2, almost opposite, well above midlength of stem, lance-shaped to egg-shaped-circular.

FLOWERS - yellowish-green; lip sessile, not ciliate in the margin, with a slender tooth on each side at the base; inflorescence 5-25 flowered, open bracts conspicuous.

HABITAT - moist forests and mossy streambanks to subalpine slopes.



ORCHIDACEAE - Orchid Family



Listera convallarioides
(Broad-leaved twayblade)

ORCHID - herb 10-35 cm tall, stem smooth below leaves, densely glandular-hairy above.

LEAVES - 2, opposite, smooth, oblong-egg-shaped or egg-shaped to almost circular.

FLOWER - inflorescence loosely 5-25 flowered; yellow-green; sepals and petals strongly curved backward; lip notched at the apex, ciliate in the margin with auricle-like basal teeth.

HABITAT - moist shaded areas, deep woods, streambanks, lake margins.

Listera cordata (Heart-leaved twayblade)

ORCHID - small herb, 6-20 cm tall, stem glabrous or glandular - hairy above leaves.

LEAVES - 2, broad heart-shaped, sessile, opposite, near mid-length of stem.

FLOWERS - inflorescence elongated 5-16 flowered; pale green to purplish green; lip cleft into 2, linear lance-shaped lobes, and armed at base with a pair of hook-like teeth.

HABITAT - in damp, mossy places, along streams or in bogs. Widespread throughout coastal and interior zones; usually inconspicuous.

ORCHIDACEAE - Orchid Family

Platanthera dilatata
(Tall white bog-orchid)

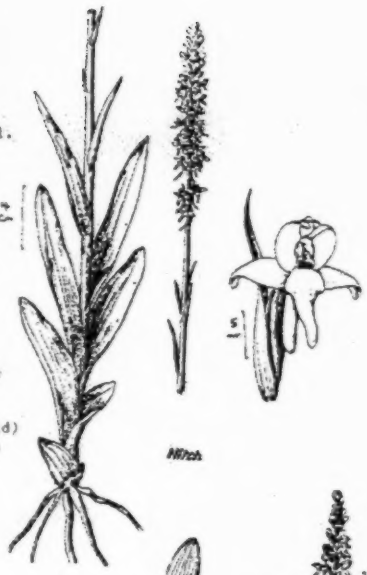
ORCHID - perennial herb, slightly swollen at the base, 0.15 - 1 m tall.

LEAVES - gradually reduced upward, sheathing, oblong to broadly lance-shaped, stem leafy throughout.

FLOWERS - 5-30, white to greenish-tinged, very fragrant, in a spike; spur slender, cylindrical, curved, longer than lip.

HABITAT - wet, often boggy ground widespread throughout the province, more common on the coast than in the interior.

NOTE: *P. stricta* (Slender rein orchid) closely resembles this species in appearance and habitat, but has greenish flowers and the spur is shorter, stout, bag-shaped.



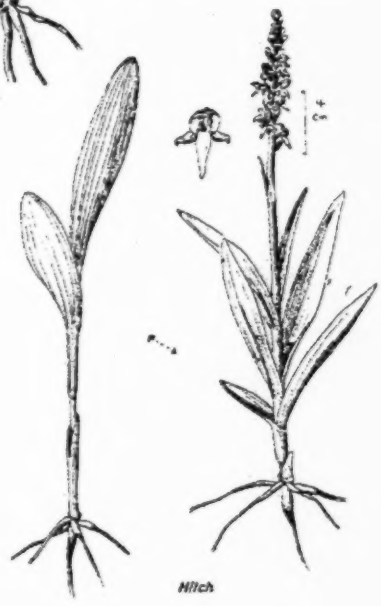
Platanthera hyperborea
(Northern green bog-orchid)

ORCHID - perennial herb, 0.2-1.0 m tall, with tuberous, thickened roots.

LEAVES - several, mostly on lower half of stem, narrowly oblong-elliptic to lance-shaped.

FLOWERS - flowers sessile, lower bracts longer than flowers, upper bracts shorter; pale to deep greenish, often purplish-tinged or veined; spur cylindrical; lip elliptic to lance-shaped; inflorescence elongate, 0.5-15 cm long, densely flowered.

HABITAT - moist to usually boggy places, sometimes on soil of calcareous origin, tolerant of deep shade. Most common in interior zones, scattered on the coast.



ORCHIDACEAE - Orchid Family

Platanthera obtusata
(One-leaved rein orchid)

ORCHID - perennial herb, 8-20 cm tall.

LEAVES - single basal leaf, elliptic-egg-shaped to oblong-egg-shaped but broadest above middle; 1 or 2 sheathing bracts.

FLOWERS - inflorescence loosely 3-15-flowered; floral bracts green below, yellowish above; perianth pale greenish or yellowish-green, lip and petals sometimes whitish; lip straight not concave; spur elongated at the tip.

HABITAT - swamps, bogs, alpine meadows and damp to wet forest areas in mountains. An interior species not know in coastal zones.

Platanthera orbiculata
(Large round-leaved rein orchid)

ORCHID - perennial herb, 20-60 cm tall.

LEAVES - usually 2, basal, opposite, lying on the ground, fleshy, round oblong-elliptic. Commonly found in vegetative state.

FLOWERS - 5-25 pale to deep greenish-white, in a loose elongated inforescence; lip straight not concave, spur elongated, tapering at the tip.

HABITAT - primarily an interior species found in moist to dry mossy forests, swamps and bogs. Frequent in drier pine ecosystems.

ORCHIDACEAE - Orchid Family

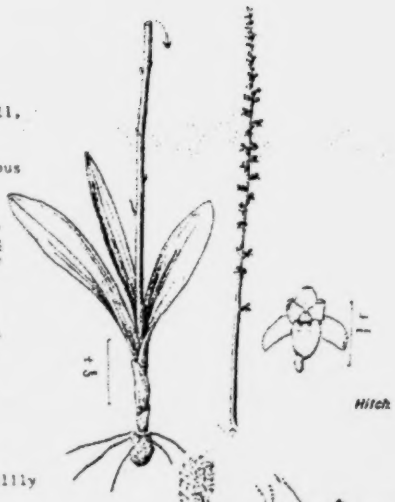
Platanthera unalascensis
(Alaska rein orchid)

ORCHID - perennial herb, 20-60 cm tall, with 1-3 spherical to egg-shaped, fleshy tubers mostly 1.5-3 cm long; leafless flower stem with inconspicuous bracts.

LEAVES - 2-4, on lower third of stem, closely clustered or basal, withering at flowering time, lance-shaped, base of leaves sheathing.

FLOWERS - flowers fragrant, numerous subsessile, spirally arranged; sepals a pale green; petals greenish to nearly white, sometimes purplish-tinged; spur equal to lip in length.

HABITAT - dry woods, to gravelly streambanks and open mountain sides, meadows. Typically a species of the central interior, and found sporadicallly on the coast.



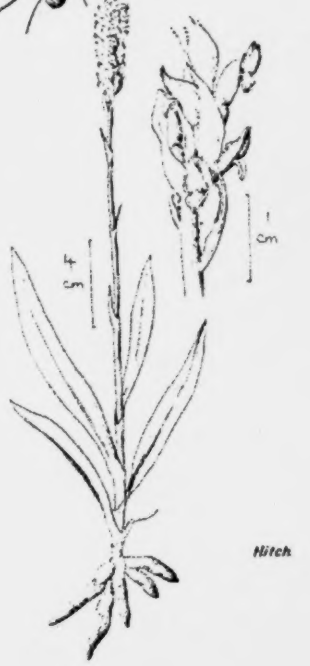
Spiranthes romanzoffiana
(Ladies' tresses)

ORCHID - perennial, mostly 10-60 cm tall, roots clustered, enlarged, fleshy.

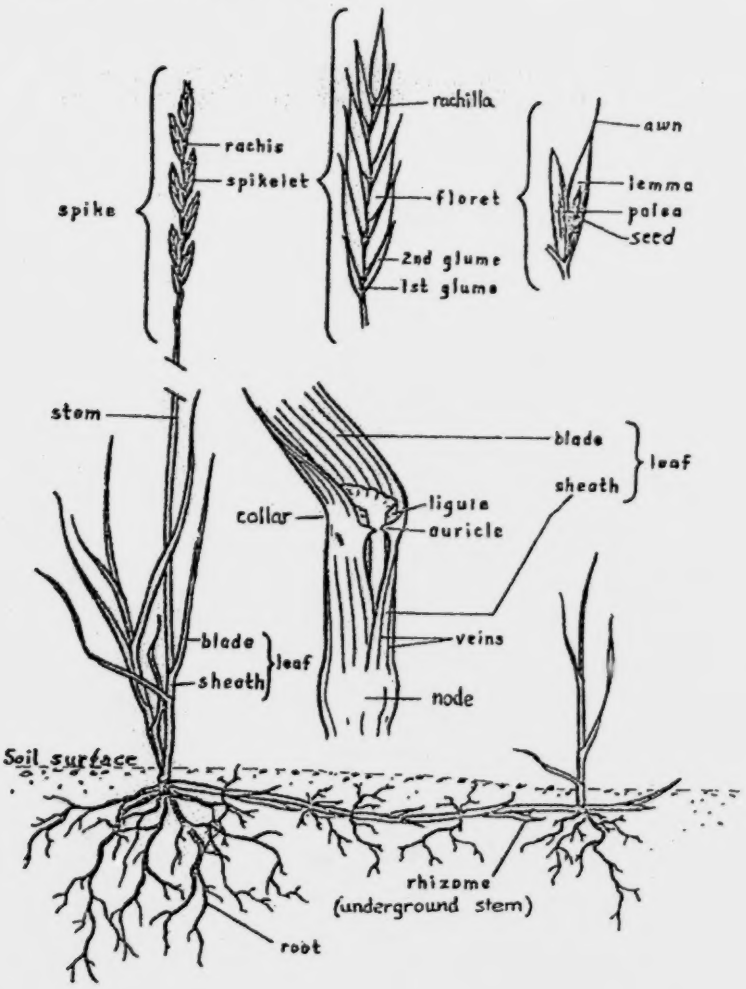
LEAVES - several, near base of stem, linear to narrowly oblong, 8-20 cm long, abruptly transitional upward to short, sheathing, lance-shaped bracts.

FLOWERS - elongate inflorescence crowded; flowers white or cream to greenish-white, tubular, aligned in 1-4 spiralling vertical rows; floral bracts whitish or pale green; flowers sweet-scented; petals form a hood over the united stamens.

HABITAT - bogs, marshes, wet meadows, open woods and open pastures, common throughout coast and interior.



PARTS of GRASS PLANTS



9

CHARACTERISTICS OF SOME COMMON GRASS GENERA

Grasses are important plants, but are rather difficult to identify. In order that some of the common grass species can be recognized, it is essential to gain at least a rudimentary knowledge of the flower parts and of the main distinguishing features of the different genera. A short list of these distinguishing characteristics are given here.

1. *Agropyron* - inflorescence a spike; few to many florets per spikelet.
   - sessile spikelets alternating on opposite sides of the rachilla.
   - claw-like auricles at throat of leaf.

2. *Bromus* - inflorescence a panicle, few to many florets, per spikelet.
   - lemmas 2-toothed at tip with awn, if present, arising between the teeth.
   - sheaths are closed.
   - leaf blades generally flat.

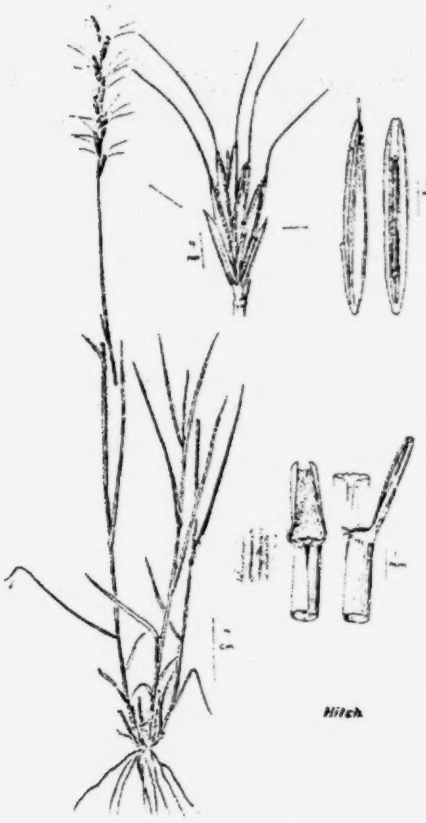
3. *Calamagrostis* - inflorescence usually a narrow panicle (but drooping with age); spikelets only 1-flowered.
   - florets with tuft of hair at the base.
   - leaves generally flat and drooping.

4. *Elymus* - inflorescence a spike; few to many florets per spikelets.
   - similar to *Agropyron* but sessile spikelets in pairs, alternating on opposite sides of the rachilla.
   - pronounced auricles at throat of leaf.

5. *Festuca* - inflorescence a panicle; few to many florets per spikelet.
   - usually with stiff, slender awn arising from tip of lemmas.
   - sheath around stem open for entire length.
   - mostly narrow leaves.

6. *Poa* - inflorescence a panicle; few to many florets per spikelet.
   - lemmas always lacking awns.
   - leaves relatively narrow, usually ending in a boat-shaped tip.
   - sheath around the stem is fused for part of its length.

POACEAE - Grass Family



Agropyron spicatum
(Bluebunch wheat grass)

GRASS - common "bunch grass" in bunches up to 500 cm^2, and may reach over 1 m in height.

SHEATHS - open, their margins overlapping and not commonly hairy.

LEAVES - blue-green, often inrolled tightly particularly when older, but can be broad and flat, often twisted when older; the stem bases are typically dark brown to black and sometimes reddish.

LIGULES - short and collar-like, being hidden in the throat of the leaf; the auricles are distant and claw-like.

INFLORESCENCE - erect, sparsely flowered spike with one spikelet per node, the individual spikelets being well removed from each other (never congested like *Agropyron cristatum*). There are several florets per spikelet; the glumes are awnless and shorter than the lemma; the lemmas are usually awnless (var. *inerme*).

HABITAT - plains, dry slopes and dry open woods, common "bunch grass" in the interior.

NOTE: The genus *Agropyron* is closely related to the genus *Elymus*. *Agropyron* has one spikelet per node of the spike and the glumes are rarely modified into long, sharp awns. *Elymus* has glumes that are frequently long, sharp and awn-like, and has two spikelets per node.

POACEAE – Grass Family

Bromus carinatus
(California brome grass)

GRASS – robust, fibrous-rooted perennial, forming small bunches, the flowering stems up to 1 m.

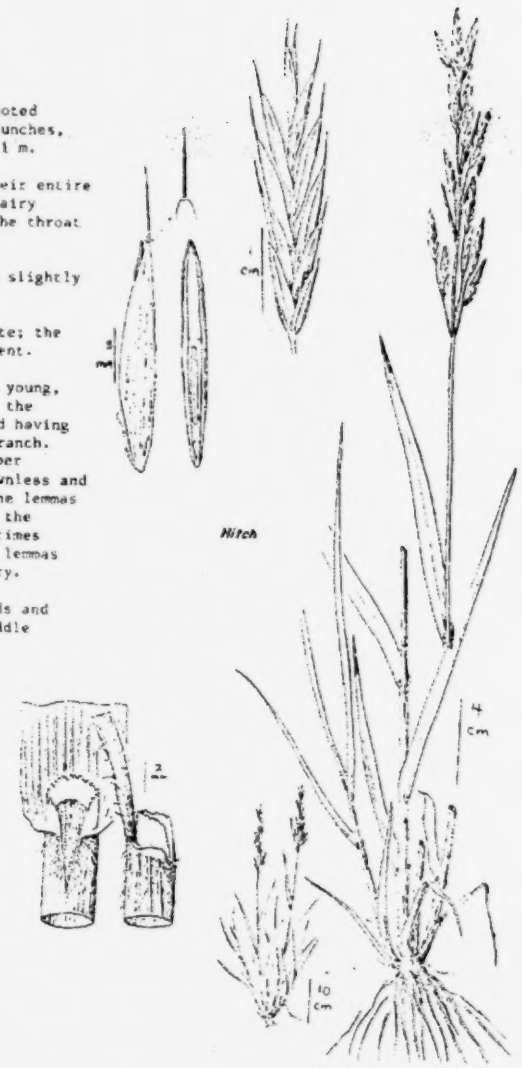
SHEATHS – closed nearly their entire length and are variously hairy although always hairy at the throat and collar of the leaves.

LEAVES – long and flat and slightly drooping.

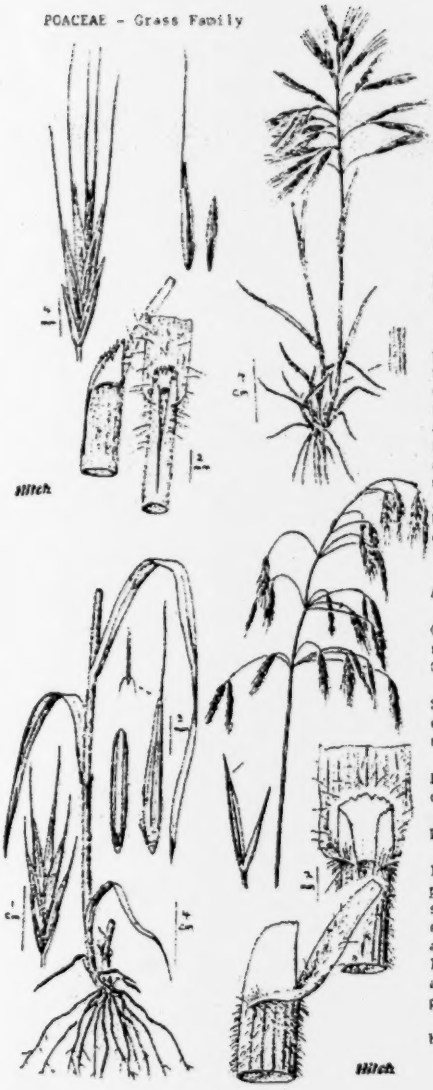
LIGULES – short and truncate; the auricles are generally absent.

INFLORESCENCE – erect when young, becoming slightly nodding; the panicle is loosely flowered having one spikelet per panicle branch. There are several florets per spikelet; the glumes are awnless and shorter then the lemmas; the lemmas are notched and awned from the notched tip; the awns sometimes exceed 1 cm in length; the lemmas are usually distinctly hairy.

HABITAT – open ground, woods and waste places at low and middle altitudes.



POACEAE - Grass Family



Bromus tectorum (Drooping brome grass)

GRASS - a delicate low weedy annual, imparts a reddish colour to the landscape if 'invades', green when young becoming reddish-brown when in flowering stage.

SHEATHS - closed.

LEAVES - wide and covered with hairs.

LIGULES - moderate length and noticeably torn. There are no auricles.

INFLORESCENCE - large, congested panicle with many large spikelets nodding on slender branches, more than one spikelet per branch and several florets per spikelet; the glumes are awnless and shorter than the lemmas; the lemmas are notched and have wiry awns up to 2 cm long; lemmas are not noticeably hairy.

HABITAT - roadsides and other dry disturbed areas.

Bromus vulgaris (Columbia brome grass)

GRASS - a delicate to robust fibrous-rooted perennial, with flowering stems 0.5-0.6 m tall; never forms bunches.

SHEATHS - closed and almost always distinctly hairy especially at the throat.

LEAVES - long, flat and conspicuously drooping.

LIGULES - long and truncate; no auricles.

INFLORESCENCE - delicate, drooping panicle with few spikelets; usually a single spikelet per panicle branch; several florets per spikelet; glumes are awnless and shorter than the lemmas; lemmas are rounded, notched and may have an awn up to 1 cm long; lemmas are partially hairy.

HABITAT - rocky woods and shady ravines.

POACEAE - Grass Family

Calamagrostis canadensis
(Bluejoint reed grass)

GRASS - a large robust rhizomatous grass sometimes forming large "tufts"; the flowering stems are usually taller than 1 m; the mature spikelets have a purple-red colour.

SHEATHS - open and never distinctly hairy except at the collar.

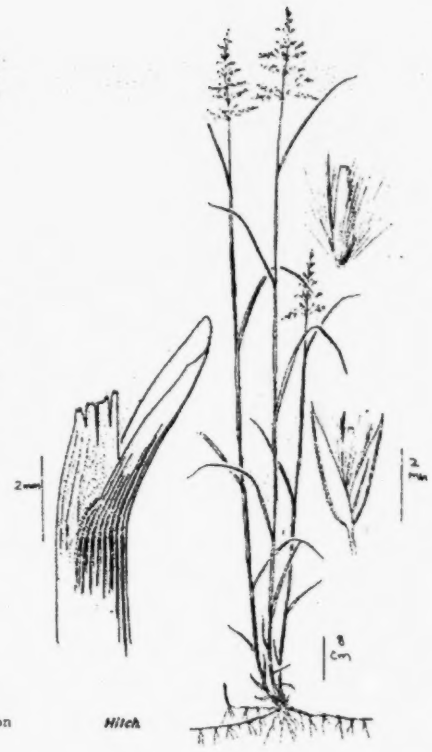
LEAVES - long, flat and slightly drooping.

LIGULES - almost 1 cm long (at least on upper stem leaves). There are no true auricles.

INFLORESCENCE - a congested spreading panicle, drooping with age. There are many spikelets per panicle branch, one floret per spikelet; glumes are awnless, purple-tinged, longer than the lemma and obscure the floret; lemmas have a delicate short straight awn from the back of the lemma. The base of the lemmas is hidden by long wiry callus hairs.

HABITAT - marshes, wet places, open woods and meadows.

NOTE: *Calamagrostis inexpansa* can be confused with *Calamagrostis canadensis*. *Calamagrostis inexpansa* typically has a pale-green to yellowish erect spike-like panicle and narrow erect leaves. The purple-red colouration of the glumes of *Calamagrostis canadensis* is suggestive of the colour of many *Poa* species.



Calamagrostis nuòescens (Pine grass)

GRASS - common rhizomatous grass, rarely encountered in flower, vegetative height is typically 0.3-0.5 m, the flowering stems can exceed 1 m in height.

SHEATHS - short, open, smooth except for collars which are hairy.

LEAVES - narrow, flat, long in comparison to sheath, pine-green, drooping.

LIGULES - variable in length, no auricles.

INFLORESCENCE - elongate, erect, congested spike-like panicle, pale colour; many spikelets per branch and one floret per spikelet; glumes are awnless, longer than the lemma and obscures the floret; lemmas have a delicate short straight awn from the back of the lemma; the base of the lemma is partially hidden by long wiry callus hairs.

HABITAT - dry forests, open pine woods, prairies and banks.

Elymus cinereus (Giant wild rye grass)

GRASS - a 'giant' grass up to 2 m in height forming distinctive grayish-blue tufts.

SHEATHS - open, slightly hairy especially at the nodes.

LEAVES - long and often more than 1.5 cm broad.

LIGULES - moderate length; very pronounced auricles.

INFLORESCENCE - robust, erect spike, with usually more than 2 spikelets per node, many florets per spikelet; glumes are awned, and the same size as the lemmas; lemmas are slightly hairy and have a short awn-like apex.

HABITAT - open woods and dry hills at low and medium altitudes. Commonly co-occurs with *Distichlis stricta*, in most alkaline areas.

POACEAE - Grass Family

Elymus glaucus (Blue wild rye grass)

GRASS - a delicate, fibrous-rooted perennial with flowering culms 0.5-0.7 m tall but always lax and drooping giving the plant a lower stature; never forms true bunches.

SHEATHS - open with conspicuous hairs.

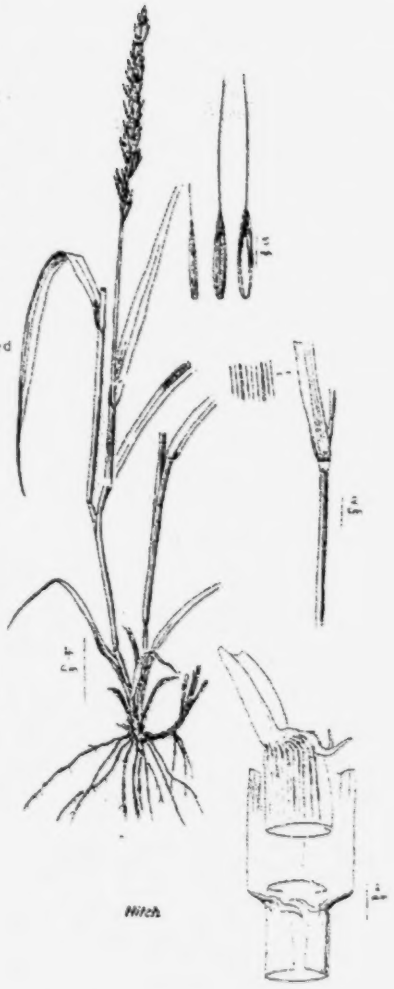
LEAVES - can be very wide (1 cm) and conspicuously drooping.

LIGULES - short and collar-like, hidden in the throat of the leaf; auricles are present and conspicuous.

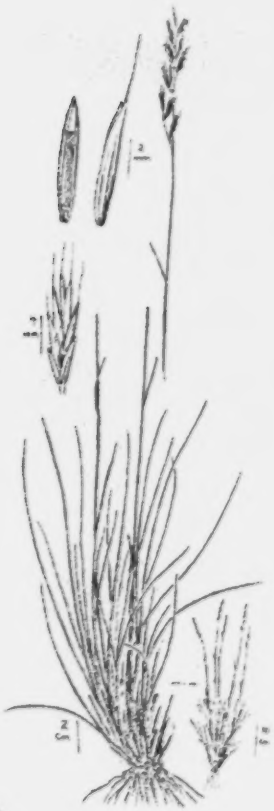
INFLORESCENCE - nodding, sparsely flowered spike; two spikelets per node of the inflorescence; several florets per spikelet; the glumes are awnless and the same size as the lemmas; the lemmas are frequently awned and never conspicuously hairy; the awns are 1-2 cm long.

HABITAT - open woods and dry hills at low and medium altitudes.

NOTE: - *Elymus hirsutus* is very similar to *Elymus glaucus* and is distinguished by the presence of long hairs along the margins of the lemma and the lack of well developed auricles. *Elymus glaucus* can be easily separated from co-occurring, forest grasses *Bromus vulgaris*, *Cinna latifolia* and *Deschampsia cespitosa* by the presence of auricles and very short collar-like ligules.



POACEAE - Grass Family



Hitch

Festuca idahoensis (Idaho fescue)

GRASS - a small bunched grass with reddish bases and flowering stems up to 0.6 m tall.

SHEATHS - open.

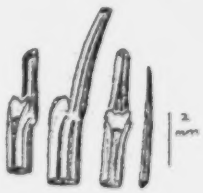
LEAVES - fine and wiry, restricted to the base of the stems, dark green and often with a waxy cover.

LIGULES - the leaves are so inrolled that the ligules are not obscured by the throat; no true auricles.

INFLORESCENCE - an erect panicle with erect branches, nodding slightly; more than one spikelet per panicle branch; several florets per spikelet; glumes are awnless and slightly shorter than the lemmas; lemmas are awned from the tip; awns are usually more than 2 mm long.

HABITAT - open woods and rocky slopes.

NOTE: This species is often confused with *Festuca saximontana* which is generally smaller and remains green longer; the panicle is generally more erect and spike-like and the spikelets are typically smaller than those of *Festuca idahoensis*.



POACEAE – Grass Family

Festuca occidentalis (Western fescue)

GRASS – a fine wispy grass with flowering culms up to 0.8 m long but very lax, forms small tufts.

SHEATHS – open.

LEAVES – very long, distinctly inrolled and very lax.

LIGULES – short (like *Festuca idahoensis* and *Festuca saximontana*), no true auricles.

INFLORESCENCE – drooping, spreading panicle; few spikelets per panicle; can be more than one spikelet per panicle branch; several florets per spikelet; the glumes are awnless, smaller than lemmas and dissimilar in size; the lemmas have long flexuous awns.

HABITAT – dry rocky wooded slopes and banks.

NOTE: this species is similar to *Festuca idahoensis* and *Festuca saximontana* but can be easily recognized by the lax growth habit, the dissimilar sizes of the glumes, and the long awns of the lemmas.

Mitch

POACEAE - Grass Family

Festuca scabrella (Rough fescue)

GRASS - large bunch grass forming bunches up to 800 cm²; flowering stems can reach 1 m high.

SHEATHS - open.

LEAVES - slightly inrolled, commonly flat and slightly drooping.

LIGULES - short (same as *Festuca idahoensis, saximontana* and *occidentalis*) no true auricles.

INFLORESCENCE - erect, spike-like when young, however at maturity an erect panicle whose branches nod slightly; panicle is few-flowered, the spikelets commonly occurring singly on the panicle branches, reddish colour, several florets per spikelet; glumes are awnless, smaller than the lemmas; lemmas are awnless although sometimes may have an elongated tip.

HABITAT - prairies, hillsides, and open woods, very common in IDF grasslands.

NOTE: tussock-like bunches, distinctive colour of the culm bases and the large, reddish spikelets make this an easy species to recognize at distance. In early spring while the previous year's flowering culms still remain erect it is possible to confuse *Festuca scabrella* for *Poa pratensis*, particularly under moderate or poorer range condition, except that *Poa pratensis* will often retain many of its florets while *Festuca scabrella* almost always looses all of its florets leaving only empty glumes.

POACEAE - Grass Family

Koeleria macrantha (Prairie koeleria)

GRASS - a small bunched grass found in abundance. The flowering culms are typically 40-50 cm tall.

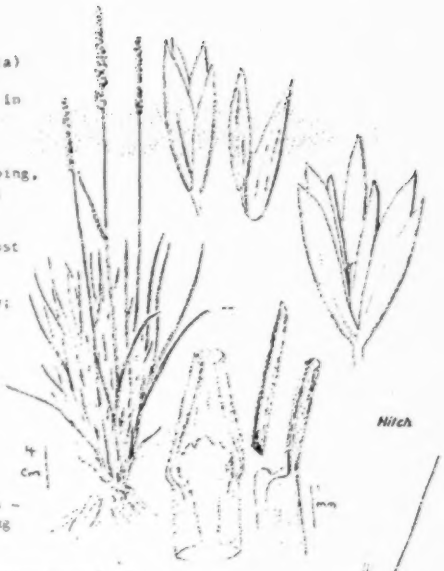
SHEATHS - open, margins not overlapping, the collars are conspicuously hairy; pinkish colour when mature.

LEAVES - slightly inrolled, and almost always distinctly short-hairy.

LIGULES - short and distinctly hairy; there are no true auricles.

INFLORESCENCE - erect spike-like panicle densely congested with many spikelets. The spikelets usually have only two florets; the glumes are awnless, the same size as the lemmas and are noticeably hairy. The lemmas are rarely awn-tipped.

HABITAT - grasslands and dry forests - found in most abundance under grazing pressures.



Oryzopsis asperifolia (Rough-leaved rice grass)

GRASS - a robust perennial grass with erect flowering stems up to 50 cm tall, and erect, slightly drooping leaves taller than the flower stem.

SHEATHS - open.

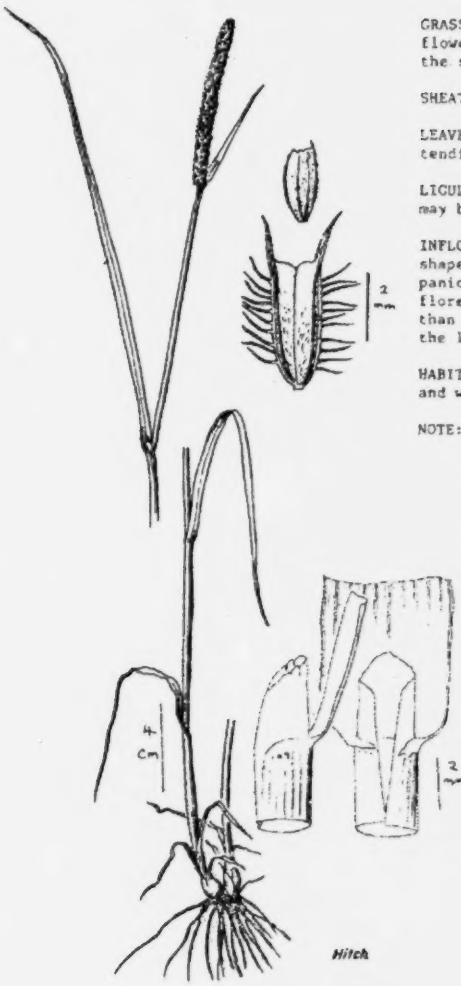
LEAVES - primarily all basal, flat and broad, slightly drooping towards the apex. The stem leaves immediately below the inflorescence are short, with a blade often less than 2 cm long.

LIGULE - short; no true auricles.

INFLORESCENCE - narrow erect panicle with erect branches; few spikelets, one floret per spikelet; glumes are awnless and the same size as the lemma; the lemma may have an awn up to 1 cm long; the awns are deciduous.

HABITAT - wooded slopes and dry banks.

POACEAE - Grass Family



Phleum pratense (Common Timothy)

GRASS - a robust perennial with flowering stems up to 1 m in height, the stem bases can be rather bulbous.

SHEATHS - open.

LEAVES - flat and moderately broad tending to droop slightly.

LIGULES - moderately long, auricles may be present.

INFLORESCENCE - a conspicuous cigarello-shaped, erect spike-like, very congested, panicle. The spikelets have one floret; the glumes are awned, longer than the lemma and obscure the floret; the lemma is short and awnless.

HABITAT - along roadsides and fields and waste places.

NOTE: at subalpine parkland and alpine elevations a less robust but similar looking species with less elongate purplish, rather than greenish inflorescences occurs commonly - this is *Pleum alpinum*. *Alopecurus aequalis* another species of lower elevation moist disturbed areas also resembles *Phleum pratense* except that it is less robust and its glumes lack awns. *Setaria viridis*, a species of drier waste places also resembles *Phleum pratense* except that its inflorescence is distinctly reddish when mature, the glumes are very much smaller than the lemma and the spikelets are subtended by barb-like bristles.

POACEAE - Grass Family

Poa canbyi (Canby's blue grass)

GRASS - a small, spring flowering bunched grass with flowering stems commonly 30-40 cm tall.

SHEATHS - partially closed, reddish colour when older.

LEAVES - strongly inrolled and mostly basal.

LIGULES - long and acute, very thick; no auricles.

INFLORESCENCE - erect sparsely flowered panicle with erect branches spreading slightly when in flower; many florets per spikelet; glumes awnless and smaller than the lemmas; lemmas awnless, elongate and have a distinctive reddish colour.

HABITAT - Sandy or dry ground.

NOTE: *Poa sandbergii* is generally a more diminutive, purple coloured species that flowers very early in the spring time and has slightly shorter and sometimes acute ligules in comparison to *Poa canbyi*. *Poa nevadensis* generally has a more densely flowered and erect panicle, and its ligules are not as thickened as those of *Poa canbyi*. *Poa juncifolia* has larger spikelets than *Poa canbyi* and it tends to be more robust with shorter ligules. With the exception of the locally abundant *Poa sandbergii*, *Poa canbyi* is the most common.

POACEAE - Grass Family

Poa interior (Inland blue grass)

GRASS - a fibrous rooted perennial with flowering stem 40-50 cm tall, doesn't form true bunches, and lacks rhizomes or stolons.

SHEATHS - partially closed.

LEAVES - slightly inrolled, the lower leaves tending to droop, the tips of the leaves are the typical *Poa* canoe-shaped.

LIGULES - short and truncate, no auricles.

INFLORESCENCE - erect, congested panicle, the branches drooping slightly when fruit is mature; many spikelets on numerous panicle branches (however generally less spikelets and smaller spikelets than on *Poa pratensis*); many florets per spikelet, glumes are awnless and as long as the lemmas; lemmas are awnless, elongate, and have a tuft of cobwebby hairs at the base, seldom as hairy as those of *Poa pratensis*.

HABITAT - grassy slopes and open woods at medium altitudes.

POACEAE - Grass Family

Poa nervosa (Wheeler's blue grass)

GRASS - a rhizomatous grass with flowering stems up to 60 cm tall.

SHEATHS - closed and reddish colour.

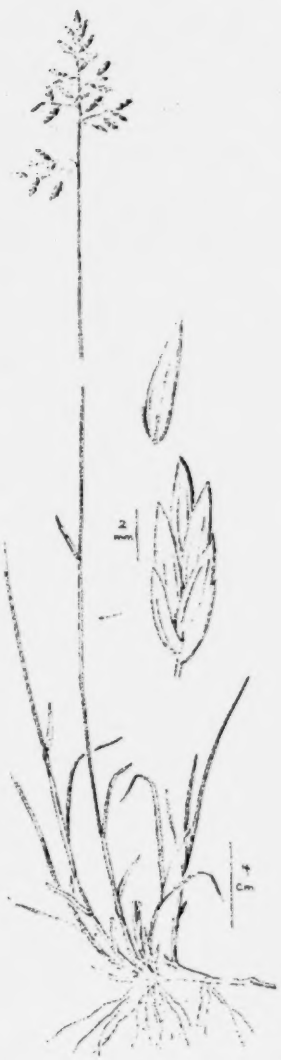
LEAVES - inrolled and mostly basal, the upper stem leaf is often reduced.

LIGULES - short and thick and distinctly truncate, no auricles.

INFLORESCENCE - partially spreading, compact, slightly drooping panicle; many florets per spikelet; glumes are awnless, smaller than lemmas and have a purplish-red colour; lemmas are awnless and lack pubescence.

HABITAT - open woods at medium altitudes.

NOTE: can be confused with *Poa cusickii* which has longer more papery ligules than the short thickened ligules of *Poa nervosa*. *Poa nervosa* is distinguished from *Poa canbyi* and its related species by the very narrow and elongate spikelet - *Poa canbyi* at maturity has rather open spikelets. Also the lemmas of *Poa nervosa* are keeled while those of *Poa canbyi* are generally not as obviously keeled.



Hitch

POACEAE - Grass Family

Poa pratensis (Kentucky blue grass)

GRASS - common, turf-forming, rhizomatous grass variable in height and producing flowering culms very readily.

SHEATHS - partially closed.

LEAVES - flat and broad with distinct broad canoe-shaped apices.

LIGULES - short and truncate, no auricles.

INFLORESCENCE - open spreading panicle (more congested when young), taking on a characteristic lop-sided nodding appearance when fruits have matured; panicle has many spikelets on many branches; spikelets have many florets; glumes are awnless, have purplish tinge on margins, are shorter than the lemmas; lemmas are awnless and have hairs along the back, and are tinged with a purplish colour.

HABITAT - open woods, meadows and open ground (commonly used in lawns).

NOTE: the colour and stature of the plant immediately identifies this species in the drier limits of its ecological range. in moist conditions it can be confused for the smaller flowered, stoloniferous *Poa palustris*, however *Poa palustris* has much longer, acute ligules than *Poa pratensis*. Several other species of *Poa* have long cobwebby hairs at the base of the lemmas, but never as pronounced as in *Poa pratensis*.

POACEAE - Grass Family

Stipa comata (Needle-and-thread grass)

GRASS - a conspicuous and distinctive looking grass when in flower and fruit. The flowering stems are up to 0.7 m high; forms low bunches.

SHEATHS - open.

LEAVES - inrolled, flat only when very young, held in a suberect angle to the stem.

LIGULES - long, no auricles.

INFLORESCENCE - a contracted panicle in flower but becomes open and spreading when in fruit; panicles have few spikelets; one floret per spikelet; glumes are awnless, longer than the lemmas; lemmas are awned with the awns usually over 10 cm long and very stiff. The base of the florets are distinctly pointed and adhere easily to most articles of clothing.

HABITAT - prairies, plains and dry hills.

Stipa occidentalis (Western needle grass)

GRASS - low diffuse bunches with flowering culms up to 80 cm high.

SHEATHS - open and variously hairy.

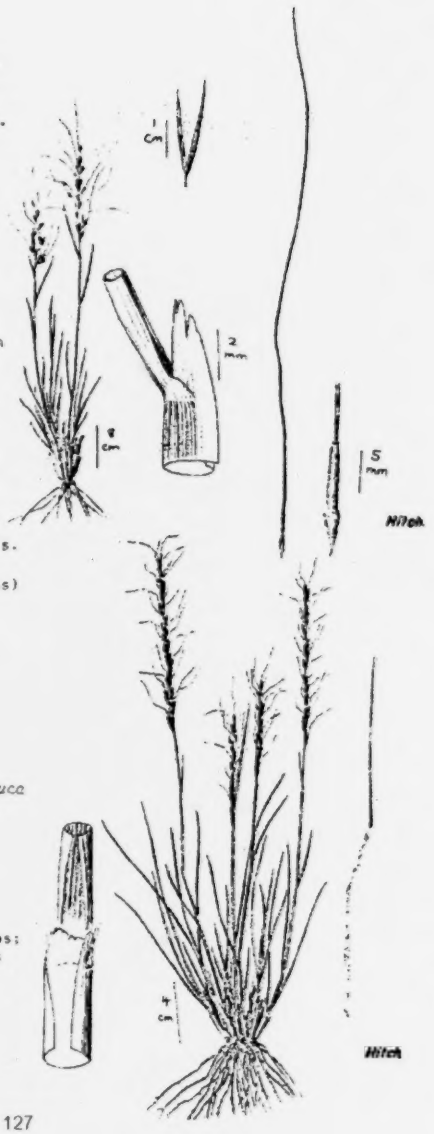
LEAVES - often strongly inrolled however in moist conditions leaves are flat.

LIGULES - short, resemble those of *Festuca idahoensis, occidentalis* and *scabrella;* no true auricles.

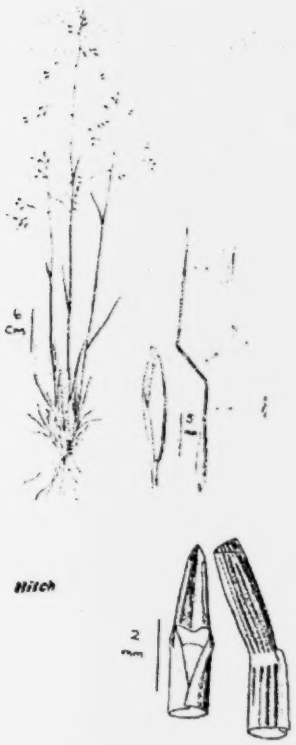
INFLORESCENCE - a narrow, congested panicle with erect panicle branches, dirty green colour, many spikelets, one floret per spikelet; glumes are awnless, greenish, longer than the lemmas; lemmas are awned, noticeable hairy; awns are about 3-4 cm long and bent.

HABITAT - dry plains, meadows and open woods, often on disturbed range sites.

NOTE: compare with *Stipa richardsonii.*



POACEAE - Grass Family



Stipa richardsonii
(Richardson's needle grass)

GRASS - a small bunch forming grass of finer textured soils than *Stipa occidentalis*. Flowering culms are up to 50 cm high.

SHEATHS - open and variously hairy.

LIGULES - short, resembling those of *Stipa occidentalis*; no true auricles.

INFLORESCENCE - a spreading panicle with only a few spikelets borne at the tips of hair-like panicle branches. There is only one floret per spikelet; the purplish awnless glumes are longer than the lemmas and give the inflorescence its distinctive purple colour; the glumes are noticeably unequal in size and shape; the lemmas are awned, about 1 cm long, the awns are generally slightly smaller in length than those of *Stipa occidentalis*.

HABITAT - bottom lands and wooded slopes.

NOTE: in flower and fruit *Stipa richardsonii* is clearly distinguished from *Stipa occidentalis* by its loose, spreading purple panicle and its unequal glumes.

POACEAE - Grass Family

Vahlodea atropurpurea
(Mountain vahlodea)

GRASS - a robust fibrous-rooted perennial of subalpine and alpine elevations, flowering culms are 0.40 - 0.50 m tall and distinct purplish colour.

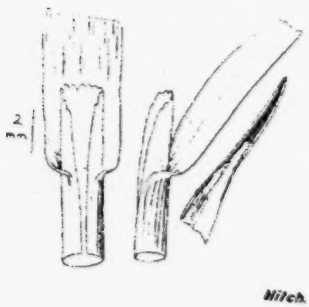
SHEATHS - open, purplish tinged.

LEAVES - broad, moderate length, canoe-shaped apices, tend to nod slightly, but are generally fairly erect.

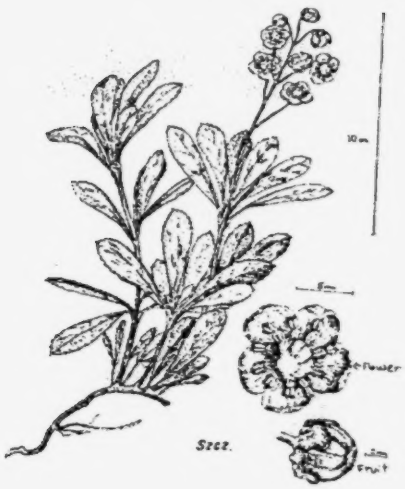
LIGULES - moderately long, no auricles.

HABITAT - woods and wet meadows at higher elevations.

NOTE: At the lower elevations the colour of the glumes causes some confusion of distinguishing between *Vahlodea atropurpurea* and some species of *Poa*. Although *Poa* and *Vahlodea atropurpurea* both have canoe or prow-shaped leaf apices, *Poa* has a closed sheath and more than two awnless florets per spikelet.



PYROLACEAE - Wintergreen Family



Chimaphila umbellata (Prince's-pine)

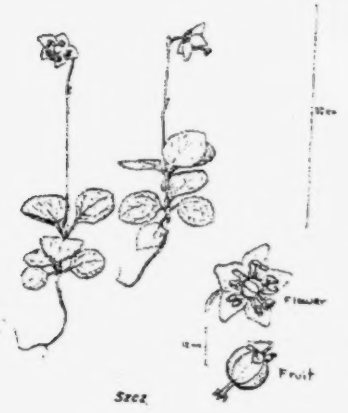
HERB - evergreen, quite stout, slightly woody perennial with creeping root-stock; stem to 35 cm tall, simple or branched, greenish, without hairs.

LEAVES - whorled, bright green and shiny above, narrowly oblong, sharply toothed.

FLOWERS - 3-10 in a small loose cluster; petals white to pink and waxy; flower stem with fine hairs.

FRUIT - depressed globose capsule to 7 mm broad.

HABITAT - dry woods, often on rotting wood in coniferous forests. Found in poor to medium, mesic to submesic sites on the coast and in the interior.



Moneses uniflora (Single delight)

HERB - a delicate, evergreen herb arising from a very slender rhizome, up to 15 cm tall; a very distinctive and attractive plant when in flower.

LEAVES - opposite or mostly in whorls of 3, thin and obscurely veined, with margin serrated, usually obovate.

FLOWERS - white, waxy, solitary, terminal, nodding; on a stem with one or two bracts.

FRUIT - globose capsule to 8 mm broad.

HABITAT - open to dense coniferous forests, with moss understory, moist woods and banks in humus soils or on rotting wood.

PYROLACEAE - Wintergreen Family

Orthilia secunda (One-sided wintergreen)

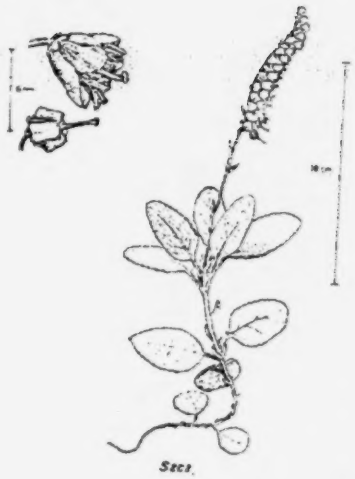
HERB - perennial with a slender much-branched rhizome; stem single, leafy towards base and often woody.

LEAVES-numerous, oval elliptical, serrated, dark green above, paler beneath.

FLOWERS 6-20 on elongated cluster with flowers directed to one side (secund), petals light greenish to white, style straight, 10-20 flowered.

FRUIT - depressed globose capsule to 5 mm broad.

HABITAT - widely distributed throughout coastal and interior forests.



Pyrola asarifolia (Common pink pyrola)

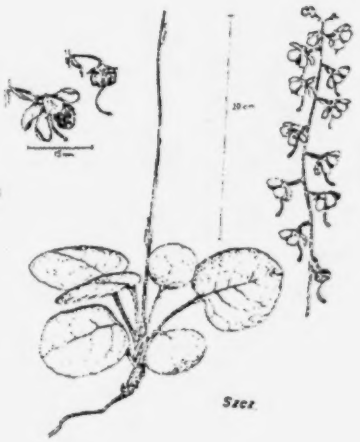
HERB - perennial, with long creeping branched rootstock; flowering stem up to 40 cm tall.

LEAVES - petiole as long as blade; circular to elliptic, leathery, shiny dark green on top, purplish beneath.

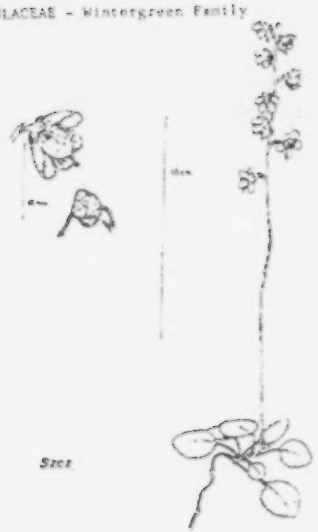
FLOWERS - 10-25 in a long loose cluster; petals pinkish to purplish-red, style long, bent to one side, 10-25 flowers.

FRUIT - capsule 6-8 mm broad.

HABITAT - moist on mesic places; chiefly in coniferous forest.



PYROLACEAE - Wintergreen Family



Pyrola chlorantha (Green wintergreen)

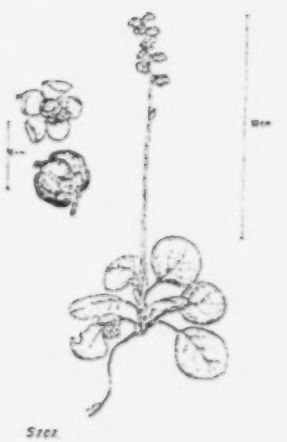
HERB - perennial with long slender rhizomes and leafy sterile shoots; flowering stem to 25 cm tall.

LEAVES - circular to broad oval, leathery, pale green on top, darker beneath; petioles longer than blade.

FLOWERS - in a long cluster of few to 10 flowers; petals pale yellowish to greenish-white, style bent to one side.

FRUIT - depressed-globose capsule.

HABITAT - on humus in coniferous forest, moist woods, occasionally in drier area in open forest.



Pyrola minor (Lesser wintergreen)

HERB - perennial with a slender rhizome; flowering stem single, naked to 25 cm tall.

LEAVES - broadly elliptic or orbicular, dark green and thin, rounded to heart-shaped at base with rounded teeth.

FLOWERS - 5-20 flowered cluster with flowers not directed to one side; petals white or pink, style straight.

FRUIT - depressed-globose capsule, 5-6 mm broad.

HABITAT - humus in coniferous forest, moist mossy woods and damp mountain meadows.

RANUNCULACEAE - Buttercup Family

Actaea rubra (Red baneberry)

HERB - stems 1-several 0.4-1.0 m tall, branched, with distinct stipules at base of stem.

LEAVES - few, 2-3 ternate, toothed and lobed.

FLOWERS - white, in terminal and axillary inflorescences.

FRUIT - glossy red or white berries, poisonous.

HABITAT - moist woods and streambanks; subhygric-mygric rich sites on the coast and in the interior.

Anemone multifida (Cut-leaf anemone)

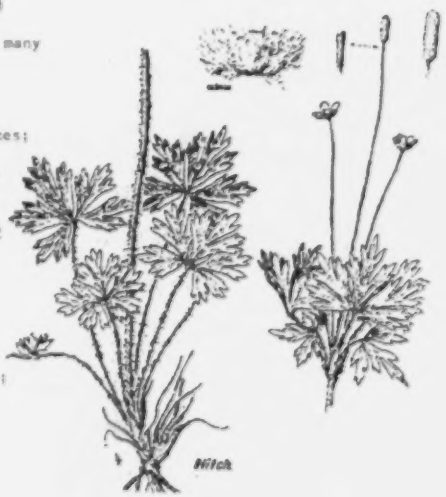
HERB - hairy, perennial with one to many stems from a thickened stem base commonly branched; 15-50 cm tall.

LEAVES - basal leaves numerous, in threes or fours and cleft 2 or 3 times; leaves at base of flower stems dissected similarly to basal leaves.

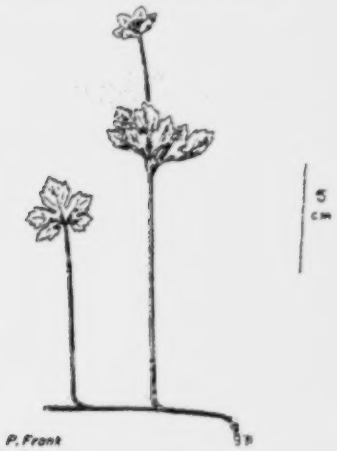
FLOWERS - yellowish and tinged with red, blue or purple, particularly on outer surface.

FRUIT - achenes borne in somewhat spherical cluster, woolly-silky.

HABITAT - from dry sunny exposed slopes and forest in the foothills and mountain valleys to higher peaks; very common in grasslands, dry open woods and meadows.



RANUNCULACEAE - Buttercup Family



Anemone richardsonii (Yellow anemone)

HERB - delicate, somewhat hairy 8-15 cm high when in flower; basal leaves and flowering stems arising from slender, horizontal, golden yellow or light brown rhizomes.

LEAVES - basal leaves are 3-lobed, rounded to kidney-shaped in outline, deeply 3-cleft, and sharply toothed; stem leaves sessile, each with 3 wedge-shaped, sharply toothed lobes.

FLOWERS - single; sepals bright yellow, elliptic.

FRUIT - nearly glabrous achenes with long beak give head a woolly-silky appearance.

HABITAT - thickets, meadows, snowbeds in mountains, to at least 1000 m.

Aquilegia formosa (Sitka columbine)

HERB - simple to branched stem up to 1 m tall, leaves mainly basal and reduced.

LEAVES - blades are in three groups (triternate), blue-green, the leaflets are thin, 2-3 times shallowly lobed, smooth on top, pubescent beneath.

FLOWERS - several, nodding, sepals pale to deep red, spurs red and straight, petal blades yellow.

HABITAT - widely distributed throughout B.C. in moist places.

NOTE: Leaflets similar to *Thalictrum occidentale*.

RANUNCULACEAE - Buttercup Family

Caltha leptosepala (Elkslip marshmarigold)

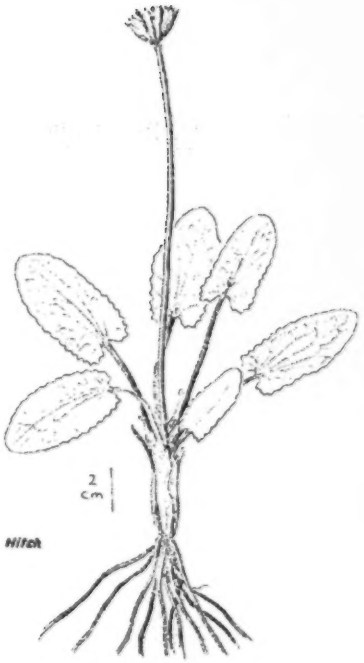
HERB - fleshy perennial, 5-40 cm tall.

LEAVES - abundant, oblong-oval, to 6 cm long, nearly entire to serrated, waxy green, petioles shorter than the blades.

FLOWERS - showy, white, tinged with blue and a greenish-yellow centre.

FRUIT - follicle, subsessile.

HABITAT - wet subalpine and alpine locations, common on organic soils.



Hitch

Coptis trifolia (Three-leaved goldthread)

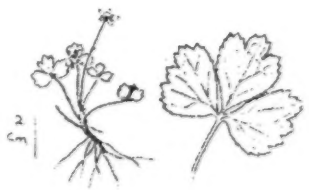
HERB - low perennial herb 5-14 cm tall, from a slender, elongate, bright yellow rhizome.

LEAVES - basal, evergreen, with 3 leaflets, diamond-egg-shaped with largest part above middle of leaflet, sharply round-toothed and very obscurely 3-lobed.

FLOWERS - leafless stalk of solitary flowers 4-12 cm tall; sepals whitish, narrowly lance-to spatula-shaped; petals half length of sepals, fleshy, hollowed and nectariferous at tip and without flattened blade, flowers in early spring for a short period.

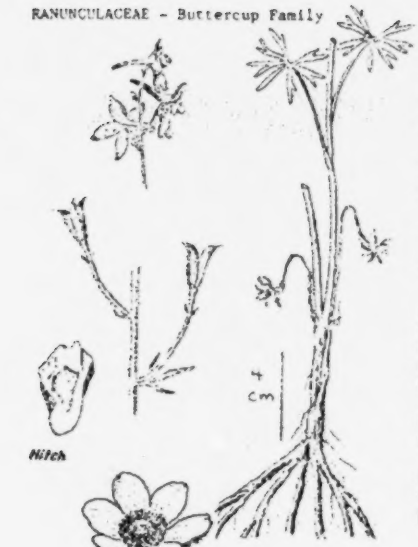
FRUIT - a cluster of long-stemmed follicles.

HABITAT - in bogs, more common in the ESSF biogeoclimatic zone.



Hitch

RANUNCULACEAE - Buttercup Family



Delphinium nuttallianum (Upland delphinium)

HERB - perennial with fleshy rootstock, single stems, not hollow, 15-40 cm tall, smooth to hairy.

LEAVES - few, mostly basal, with long petioles, the blades are 2-4 times divided into linear segments; the upper leaves are smaller and have fewer segments.

FLOWERS - a loose raceme of 3 to 15 blue to violet flowers; sepals 5, blue, ovate, the uppermost bearing a backward projecting spur; petals 4, blue or white heavily purplish penciled, deeply notched on lower edge, upper petals white or bluish.

FRUIT - follicles somewhat spreading at maturity.

HABITAT - sagebrush desert to mountain valleys and slopes, most frequent in the ponderosa pine belt.

Pulsatilla occidentalis
(Western pasqueflower, Tow-head baby)

HERB - grayish to green, long hairy, perennial from a stout, often branched woody stem base; 1 flower per stem, 20-50 cm tall.

LEAVES - have long petioles, large, more than 2 leaflets per leaf, arranged in three's, parsley-like leaf (finely divided).

FLOWERS - single on stem, white or slightly purplish tinged.

FRUIT - big fluffy seed heads with long silky plumes.

HABITAT - mountain slopes and meadows at middle to higher elevations.

RANUNCULACEAE - Buttercup Family

Ranunculus acris (Meadow buttercup)

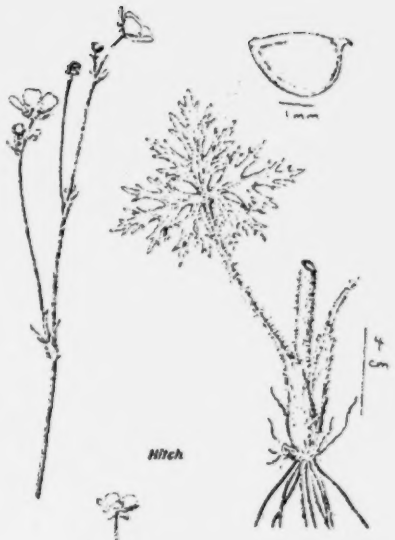
HERB - hairy perennial; stems 1 to several hollow 30-80 cm tall.

LEAVES - basal leaf blades broadly heart-shaped, deeply 3-lobed, lateral segments again divided nearly to base, and again cut 2-3 times into sharp-pointed segments, central main lobe ternately segmented and cut as lateral pair; stem leaves alternate, transitional to 3-5 lobed bracts.

FLOWERS - sepals greenish, hairy, quickly deciduous; petals 5, yellow.

FRUIT - glabrous smooth achene with stylar beak broad, flattened and curved.

HABITAT - moist to well-drained soil at lower elevations; moist meadows, roadsides.



Ranunculus eschscholtzii
(Subalpine buttercup)

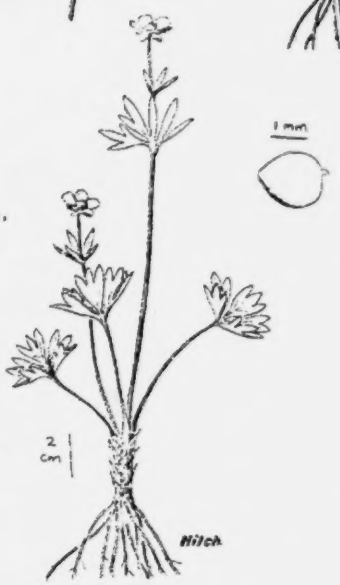
HERB - perennial with fibrous roots, stems 1-several, 5-25 cm tall.

LEAVES - basal ones slender petiolate, kidney-shaped to oval in outline, from shallowly 3-lobed to 2-3 times dissected; stem leaves sessile.

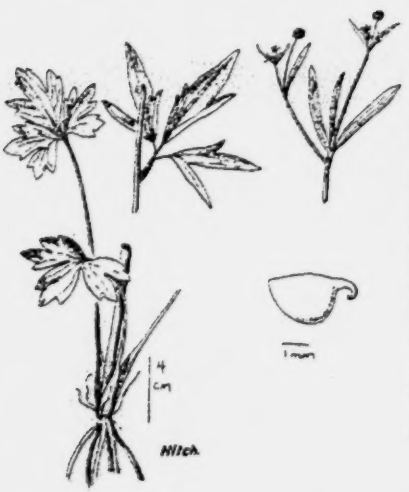
FLOWERS - 1-3 yellow, terminal; petals 5, 7-15 mm long.

FRUIT - achene smooth, glabrous to lightly hairy, with recurved stylar beak.

HABITAT - mountain meadows and talus slopes, often blossoming at edges of melting snowbanks.



RANUNCULACEAE - Buttercup Family



Ranunculus uncinatus
(Little-flowered buttercup)

HERB - hairy to nearly smooth annual or perennial with coarse fibrous roots; stem usually single, erect, not nodally rooting, simple or sometimes branched, hollow-stemmed 0.2-0.6 m tall.

LEAVES - basal leaves with petioles up to 20 cm long; blades heart-shaped to deltoid, 3-8 cm long, deeply trilobed, the lateral segments again lobed nearly half their length and with a few deep teeth, the central segment shallowly trilobed and less deeply few toothed; stem leaves few.

FLOWER - petals 5, yellow, small.

FRUIT - an achene with a persistent hooked style resembling a claw.

HABITAT - moist soil, often in shade.

Thalictrum occidentale (Western meadowrue)

HERB - delicate, perennial herb, stems 40-100 cm tall, young stems dark purplish.

LEAVES - 3-4 times ternate; leaflets 3-lobed, each lobe less deeply 2-3 lobed or toothed, glabrous.

FLOWERS - greenish-white (female) to purplish (male); male and female flowers on separate plants.

FRUIT - achene with 3 prominent nerves on each side.

HABITAT - moist lowland woods to subalpine slopes.

NOTE: *Aquilegia formosa* is similar except its leaves are hairy beneath.

RANUNCULACEAE - Buttercup Family

Trollius laxus (White globe flower)

HERB - smooth perennial with strong fibrou ots; stems 1-several 10-40 cm tall.

LEAVES - basal leaves have long petioles with broad membranous stipules giving the base a distinctive sheathed appearance; the leaf blade is divided into 5 obovate, 3 lobed, toothed segments; stem leaves have short petioles below and are without petioles above.

FLOWERS - single on stems 2-15 cm long; greenish white to cream with golden centres.

HABITAT - swampland to alpine meadows or wet slopes usually blossoming as the snow recedes.

ROSACEAE Rose Family

Aruncus dioicus (Goatsbeard)

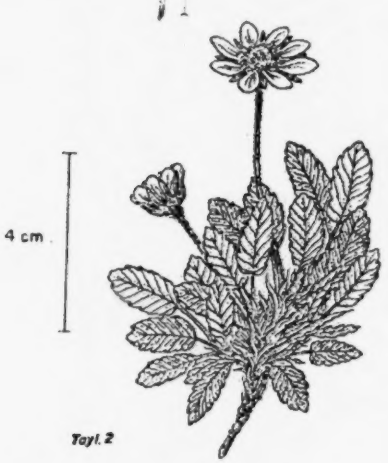
HERB - deciduous perennial with stout short-creeping rhizomes and several stems 1-2 m tall.

LEAVES - alternate; mostly 3 times compound, sharply serrated, more or less hairy on both sides.

FLOWERS - white, in dense, terminal, compound cluster.

FRUIT - follicle 3 mm long.

HABITAT - in damp woods and along streams.



Dryas octopetala (White mountain avens)

HERB - a small plant about 5 cm high; flower stalk is hairy with black glandular hairs on upper part.

LEAVES - the margins are rounded or sharp toothed rolled under, strongly wrinkled (veins are sunken), smooth or slightly hairy on upper surface, white woolly beneath; veins are prominent with brown hairs with tufts of long white hairs on their sides.

FLOWERS - single on a stalk, white with 8 petals, in July and August.

FRUIT - achene with persistent plumose, styles forming a fluffy white tuft.

NOTE: *Dryas drummondii* is similar but has pale yellow flowers.

ROSACEAE - Rose Family

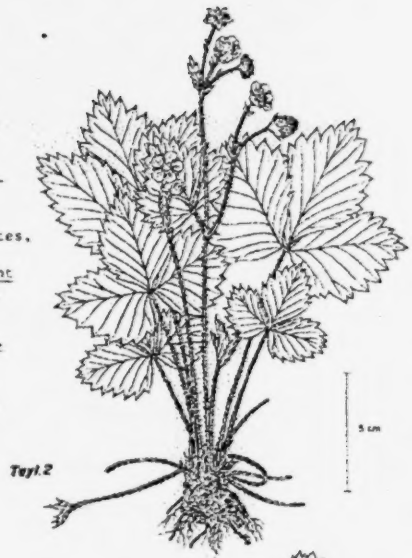
Fragaria vesca (Wood strawberry)

HERB - perennial with 1 to several crowded, short and thick rootstocks spreading by runners.

LEAVES - leaflets are bright yellow-green on upper surface, paler and somewhat whitish below, in groups of 3, sparsely hairy on upper surfaces, with sharp-teeth; terminal tooth more than 1/2 as wide as the adjacent lateral teeth and projecting beyond them.

FRUIT - small "strawberry' succulent and palatable up to 1 cm broad.

HABITAT - moist woods, stream banks and sandy meadows.



Fragaria virginiana ssp. *glauca* (Blueleaf strawberry)

HERB - perennial with rootstock usually a single crown, with several trailing shoots; flowering stem up to 15 cm tall.

LEAVES - glaucous bluish-green above, 3 compound, naked to silky hairy beneath, edge serrated with terminal tooth less than 1/2 as wide and shorter than the adjacent teeth, leaflets with short petiole.

FLOWERS - white 2-15 in open cymes.

FRUIT - small strawberry, fruit stem shorter than leaves; juicy, delicious, and much richer in flavour than domestic species.

HABITAT - open places throughout the province, most common in interior.

ROSACEAE - Rose Family

Toyl. 2

Geum macrophyllum (Large-leaved avens)

HERB - perennial, rhizomatous with stems to 1 m tall and bristly hairy below.

LEAVES - those from rootstock are long petioled, with terminal segments largest, heart-to-kidney-shaped, and several smaller leaflets occurring below; stem leaves sessile or nearly so, deeply 3-lobed or 3-foliate.

FLOWERS - bright yellow, from leaf axils or in terminal inflorescence.

FRUIT - achenes short-hairy.

HABITAT - moist woods and openings.

Toyl. 2

Geum triflorum (Old man's whiskers)

HERB - soft, hairy, perennial with thick scaly rootstocks forming clumps up to 30 cm or more broad.

LEAVES - basal, leaves have many deeply cut leaflets, hairy on the veins beneath, stem leaves, usually 2 or 4 opposite, small, pinnate with linear divisions.

FLOWERS - purplish, nodding, in clusteer, from May to July,

FRUIT - distinctly hairy achene with long plumose style.

HABITAT - open dry calcareous situations, gravelly soil, grasslands.

ROSACEAE - Rose Family

Luetkea pectinata (Partridgefoot)

HERB - prostrate, evergreen mat forming semi-shrub; flowering stem up to 15 cm tall.

LEAVES - numerous, mostly crowded in thick basal tufts, without stipules, two to three times 3-dissected, withering and persistent for many years.

FLOWERS - white in a terminal cluster, on an upright leafy flowering stem.

FRUIT - several seeded follicle.

HABITAT - moist or shaded locations in subalpine and alpine.

Toyl. 2

Potentilla anserina (Common silverweed)

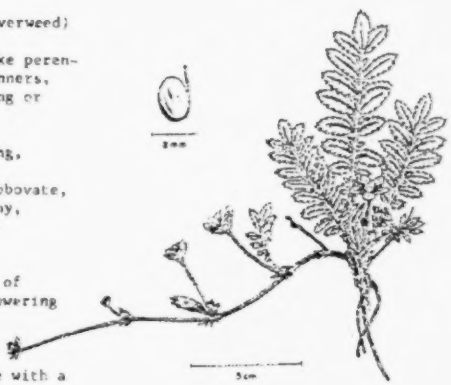
HERB - herbaceous strawberry-like perennial with long, many jointed runners, more or less hairy with ascending or loosely spreading hairs.

LEAVES - all basal, 10-20 cm long, spreading, pinnate with larger leaflets (15-25) are oblong to obovate, serrate, silky hairy below, shiny, green and smooth above or silky on both sides.

FLOWERS - solitary on the nodes of the runners, or naked stems, flowering stems up to 10 cm tall, flowers rich yellow.

FRUIT - thick ovoid, cork achene with a groove on the back.

HABITAT - open damp places, particularly the margins of streams and ponds, mudflats.



Toyl. 2

ROSACEAE - Rose Family

Potentilla glandulosa (Sticky cinquefoil)

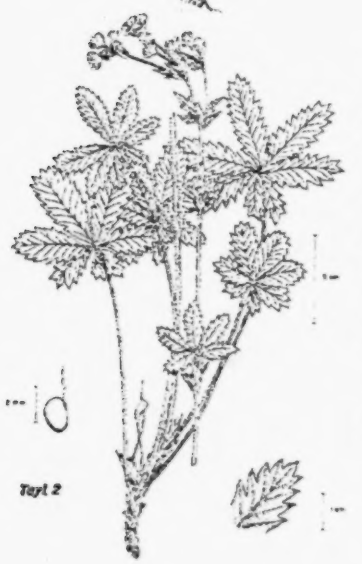
HERB - perennial from a branched woody stem base, more or less glandular throughout, with several unbranched erect stems up to 0.5 m tall from smooth to densely glandular hairy.

LEAVES - mostly basal with long petioles, 5-9 leaflets; leaflets are sharply serrate, wedge-shaped to oblong-ovate, glandular hairy to nearly smooth; stem leaves few and reduced.

FLOWERS - a more or less spreading cluster of yellow flowers.

FRUIT - an achene.

HABITAT - open woods,plains and hillsides.



Potentilla gracilis (Graceful cinquefoil)

HERB - perennial with stout, branched caudex, with several stems up to 0.8 m tall, erect.

LEAVES - basal leaves numerous, blades hand-like, leaflets variable in shape, serrations, pubescence, usually paler beneath, and from nearly smooth to densely hairy; 1 or 2 stem leaves, the petiole sometimes longer than the leaflet.

FLOWERS - many-flowered cluster, flower yellow, May to July.

FRUIT - greenish-drab, smooth achene

HABITAT - various low land habitats occasionally in montane situations.

ROSACEAE - Rose Family

Potentilla palustris
(Marsh cinquefoil)

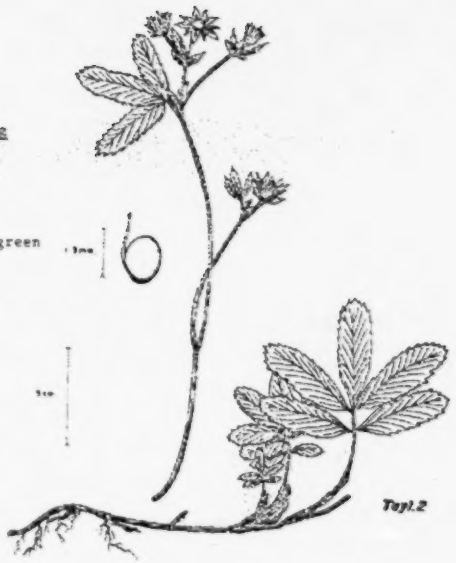
HERB - perennial with long-creeping often floating, more or less woody rhizome; stems frequently reddish below, to 1 m tall.

LEAVES - lower ones pinnate, 5-7 leaflets, coarsely serrated, pale green above, glaucous on the underside, upper leaves smaller.

FLOWERS - several to many in loose terminal cluster, purplish, and brownish.

FRUIT - a plumply ovate achene.

HABITAT - in marshes and bogs, usually at least partly submerged. Common throughout the province.



Rubus pedatus (Strawberry bramble)

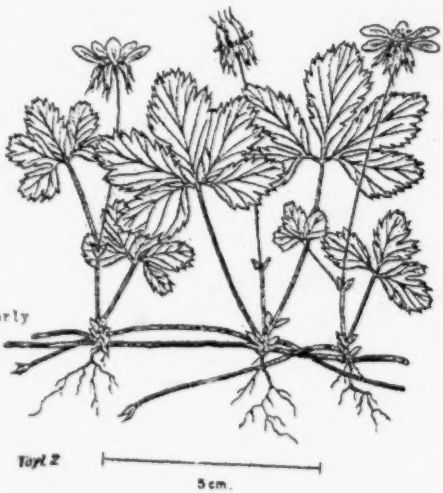
HERB - perennial with creeping stem, rooting at the nodes, produces short, erect stems bearing 1-3 leaves; flowering stems erect, unarmed and short (2 cm or less).

LEAVES - usually palmately 5-foliate and coarsely serrated.

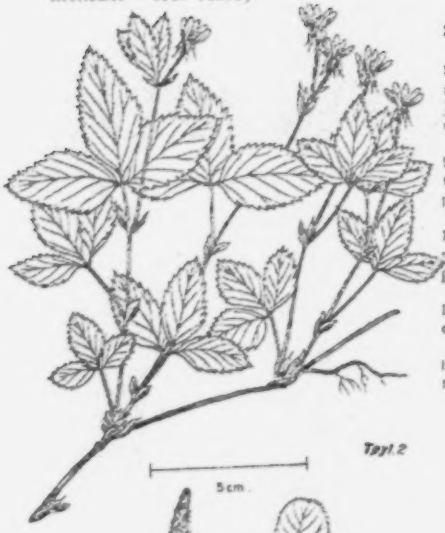
FLOWERS - solitary on very slender pedicels; petals white, spreading or reflexed.

FRUIT - red druplets, more or less coherent; very small and not particularly flavourful.

HABITAT - damp usually montane woods.



ROSACEAE - Rose Family



Toyl.2

Rubus pubescens (Dwarf red blackberry)

HERB - perennial with slender trailing stems, often rooting at nodes, with soft long hairs; flowering stem erect, unarmed, to 50 cm tall.

LEAVES - 3-foliate, acute, sharply toothed and often entire on basal portion.

FLOWERS - 1-3 on short lateral branches; pedicels covered with stalked glands; petals white to rarely rose, erect.

FRUIT - aggregate of dark red druplets, edible.

HABITAT - in forest, typically an interior species.

Toyl.2

Sanguisorba canadensis (Sitka burnet)

HERB - glabrous, perennial, freely rhizomatous; flowering stems 25-100 cm tall.

LEAVES - mostly basal; basal leaves with attached membranous stipules; blades 10-30 cm long; 9-17 leaflets, egg-shaped to egg-shaped-oblong, coarsely serrate; leaves of flowering stems 1-3, reduced, with free leaflet-like stipules.

FLOWERS - inflorescence elongate, sepals greenish-white or yellowish-white to slightly pinkish-or purplish-tinged.

FRUIT - an achene.

HABITAT - bogs, swamps, streambanks, meadows.

SAXIFRAGACEAE - Saxifrage Family

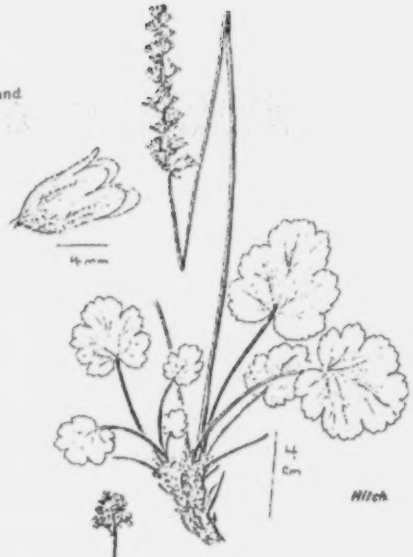
Heuchera cylindrica
(Round-leaved alumroot)

HERB - perennial with branching base and short thick rhizomes; flowering stems 1.5 - 0.9 m tall with glandular hairs on upper stem, stem naked with 1-3 brownish-greenish bracts.

LEAVES - all basal, oval shaped, 1-6 cm wide, from shorter to longer than broad, from smooth to very glandular hairy, sticky, have irregular lobes.

FLOWERS - in a spike-like inflorescence, flowers are cream-coloured to greenish-yellow, bell-shaped.

HABITAT - rocky soil, cliffs and talus slopes.



Leptarrhena pyrolifolia
(False saxifrage)

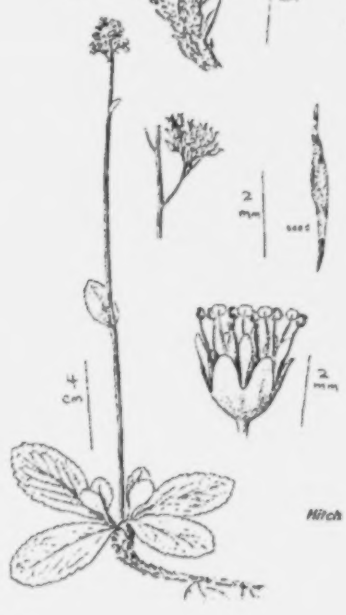
HERB - perennial with robust wide-spreading horizontal rootstock.

LEAVES - mostly basal, leathery, oval-oblong, margin round-toothed, bright green above, pale green beneath; 1-3 smaller leaves on flowering stem.

FLOWERS - white, in a tight cluster at the tip of a 20-40 cm long stem; in fall flowering stems are purplish red.

FRUIT - purplish-red capsules.

HABITAT - streambanks and wet ground, in subalpine and alpine meadows.



SAXIFRAGACEAE - Saxifrage Fa

Lithophragma parviflorum
(Small-flowered woodland star)

HERB - plant with flowering stems 10-30 cm tall, stems are densely glandular, hairy, purplish above, often with grayish or whitish hairs.

LEAVES - basal leaves have petioles, 2-6 cm long, the blades are 1-3 cm broad and are divided into 5 main divisions which each have 2 or 3 lobes; the stem leaves are often cleft into narrower segments.

FLOWERS - in racemes which are crowded at the bottom becoming more open, up to 15 cm long, 5 to 11 flowers, flower pedicels erect, flowers white to pinkish or purplish. Flowers appear in early spring and quickly disappear.

FRUIT - seeds ellipsoid, brown.

HABITAT - prairies and grassland to sagebrush desert and lower montane forest.

Mitella breweri (Brewer's mitrewort)

HERB - perennial with leafless flowering stem, 10-40 cm tall.

LEAVES - with none to few brownish hairs, heart-to-kidney-shaped, very shallowly and indistinctly 7-11 lobed lightly rounded-toothed.

FLOWERS - in racemes of 20 to 60 flowers; greenish-yellow, saucer-shaped; petals pinnately dissected into hair-like structures; stamens 5, alternate with petals.

HABITAT - moist mountain valleys, and open to wooded slopes, to timberline.

SAXIFRAGACEAE - Saxifrage Family

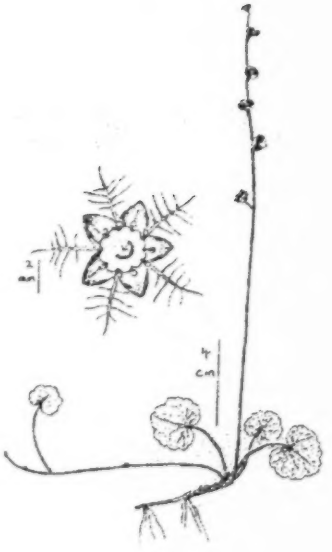
Mitella nuda (Stoloniferous mitrewort)

HERB - rhizomatous, usually stoloniferous; erect flowering stems 20-30 cm tall.

LEAVES - blades heart-shaped to kidney-shaped, 1-3 cm long, doubly round-toothed, sparsely hairy on upper surface.

FLOWERS - erect flower stems 3-20 cm tall; inflorescence 3-12 flowered; calyx broadly bell-shaped-lobed 1/2 length; petals greenish-yellow, dissected into 8 threadlike lateral divisions; 10 stamens, distinguishes this species from all other *Mitella*.

HABITAT - damp woods, along streambanks in bogs.



Mitella pentandra
(Five-stamened mitrewort)

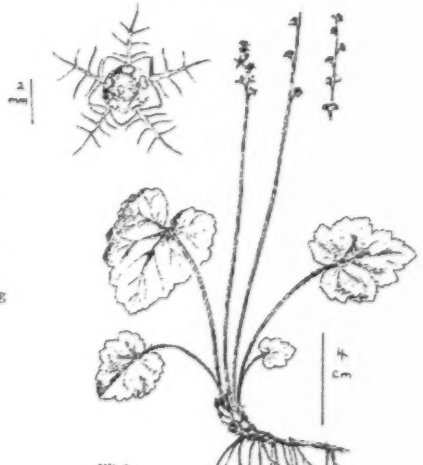
HERB - perennial occasionally with creeping shoots.

LEAVES - hairy and glandular, oval-heart shaped, shallowly and indistinctly 5-9 lobed and round-toothed.

FLOWERS - in an elongated cluster of 6-25 flowers, saucer-shaped; petals greenish, dissected into 4-10 thread-like segments.

HABITAT - moist woods especially along streams and in wet meadows.

NOTE: Somewhat resembles *Tiarella unifoliata* (p.).



SAXIFRAGACEAE - Saxifrage Family

Saxifraga bronchialis (Prickly saxifrage)

HERB - tufted perennial up to 30 cm broad.

LEAVES - rigid, spiny, closely crowded and overlapping, moss-like leaves, linear-lanceolate, with a marginal fringe of stiff hairs; withering.

FLOWERS - flowering stems 5-13 cm tall, with several reduced, spiny leaves the stem is glandular hairy above; flowers 2-10 in an open raceme-like flat-topped cluster; flower petals are white, usually strongly purple-spotted above the middle.

FRUIT - capsule, purplish, 4-5 mm long without a divergent beak.

HABITAT - from sea-level to arctic-alpine in rock crevices and rock slides to open slopes and alpine scree.

Saxifraga lyallii (Lyall's saxifrage)

HERB - perennial with well developed rootstocks, often forming small mats.

LEAVES - all basal, the blades are 10-25 mm long and nearly as broad, prominently toothed; the leaves have slender petioles about as long as the blades, smooth or brownish hairy above.

FLOWERS - flowering stems 8-25 cm tall, usually less than 15 flowers, sometimes branched; flowers white often aging to pink.

FRUIT - seeds brownish, ellipsoid, rough.

HABITAT - usually along streams or ponds or in wet gravelly meadows.

SAXIFRAGACEAE - Saxifrage Family

Tiarella unifoliata (Coolwort foamflower)

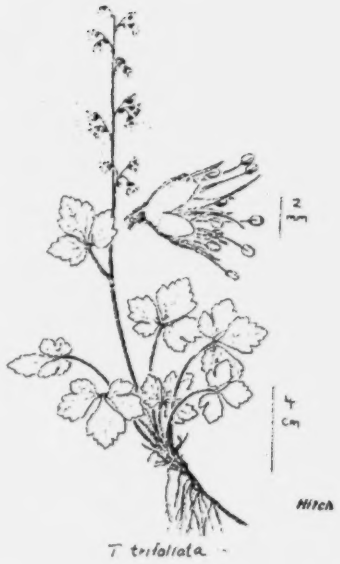
HERB - perennial with slender rootstock, slender, horizontal to ascending.

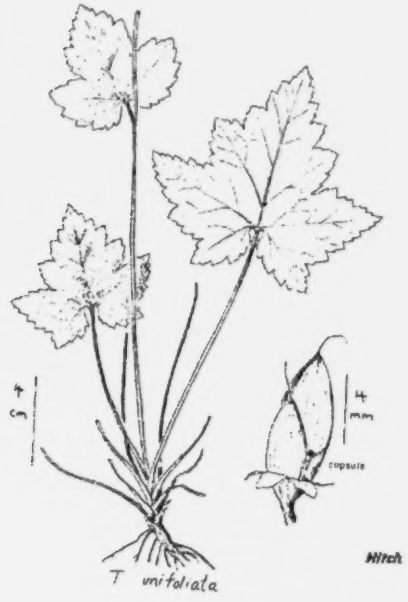
LEAVES - simple, palmately 5-lobed, to 12 cm broad and 8 cm long.

FLOWERS - white in elongated cluster, flower stem with a single leaf.

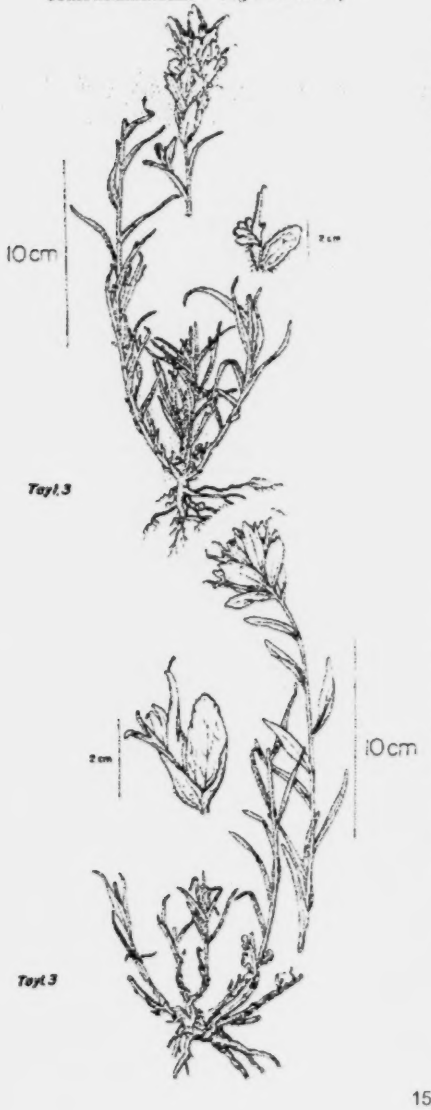
HABITAT - moist woods, especially along streambanks. Widespread, moist shaded sites, medium to rich sites.

NOTE: *Tiarella trifoliata* is similar except the leaves are divided into 3 leaflets. It is more abundant in coastal forests.





SCROPHULARIACEAE - Figwort Family



Castilleja miniata (Scarlet paintbrush)

HERB - perennial with few erect or ascending stems from a woody base to 80 cm tall.

LEAVES - upper leaves linear to lance-shaped usually entire, without or with fine hairs.

FLOWERS - greenish, mostly concealed by bracts; in florescence conspicuous composed of bright red to scarlet toothed and hairy bracts.

HABITAT - open areas, mostly at relatively low elevations, common in B.C.

Castilleja rhexifolia
(Alpine Indian paintbrush)

HERB - perennial with clustered stems erect or ascending from a woody base, usually less than 30 cm tall.

LEAVES - linear-lanceolate sometimes broader, margins usually entire, upper leaves commonly lobed, smooth to finely puberulent, sticky.

FLOWERS - conspicuous, crimson (drying purple) sometimes yellow.

HABITAT - alpine and subalpine meadows.

SCROPHULARIACEAE - Figwort Family

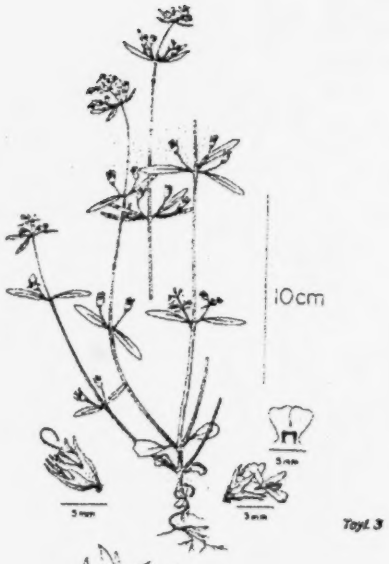
Collinsia parviflora
(Small-flowered blue-eyed Mary)

HERB - stems erect or ascending up to 50 cm tall, branched or simple, smooth to finely hairy.

LEAVES - toothed or not toothed, oblong to lance-linear, becoming smaller and bract-like in the flowers, finely hairy, often purplish below lower leaves ovate to oblong-ovate, upper leaves often whorled.

FLOWERS - 2-5 in a whorl above, solitary below, blue or pale blue with white upper lip, on long pedicels, flowers appear for a short time only.

HABITAT - open grassy places, mossy rocks, wet slopes.



Toyl 3

Melampyrum lineare
(Narrow-leaved cow-wheat)

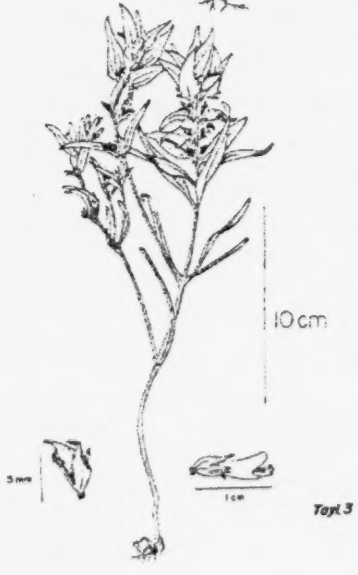
HERB - slender annual with stems simple or few-branched, 10-30 cm tall.

LEAVES - opposite, short petiolate, linear or lance-shaped.

INFLORESCENCE - white or pinkish with yellow palate, with bracts scarcely differentiated from the proper leaves.

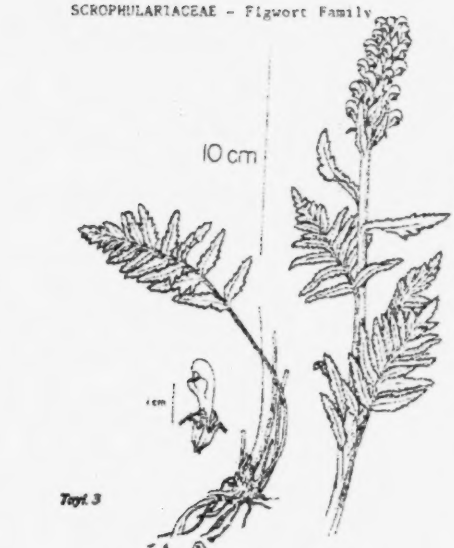
HABITAT - dry woods, especially pine stands.

NOTE: This species acts as a host for White stalactiform blister rust which attacks Lodgepole pine.



Toyl 3

SCROPHULARIACEAE - Figwort Family



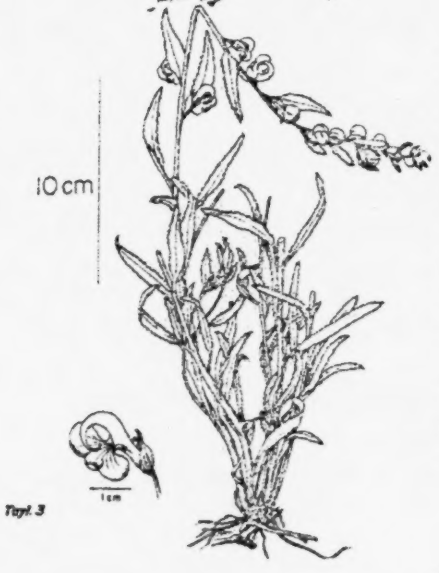
Pedicularis bracteosa
(Bracted lousewort)

HERB - perennial with erect stems up to 1 m tall, fibrous roots.

LEAVES - with short petioles, are pinnately cut, up to 7 cm long, segments are finely serrate, the segments of the upper leaves are smaller, the leaves are not hairy.

FLOWERS - yellow, or purple or red, spike-like, flowers have hooked-beaks.

HABITAT - moist habitats in the mountains.



Pedicularis racemosa
(Sickle-top lousewort)

HERB - fibrous-rooted perennial from a woody stem-base, 0.15-0.5 m tall, with clustered stems.

LEAVES - lower leaves are reduced, the others well distributed along the stems; leaves have short petioles, lanceolate or lance-elliptic to lancelinear, 4-10 cm long and 0.5 - 1.5 cm wide, doubly serrate.

FLOWERS - inflorescence is lax and elongate, the lower flowers are often in the leaf axil; flowers are pink to purplish or white to yellowish-white.

HABITAT - coniferous woods at moderate elevations, sometimes in the open, subalpine parkland.

SCROPHULARIACEAE - Figwort Family

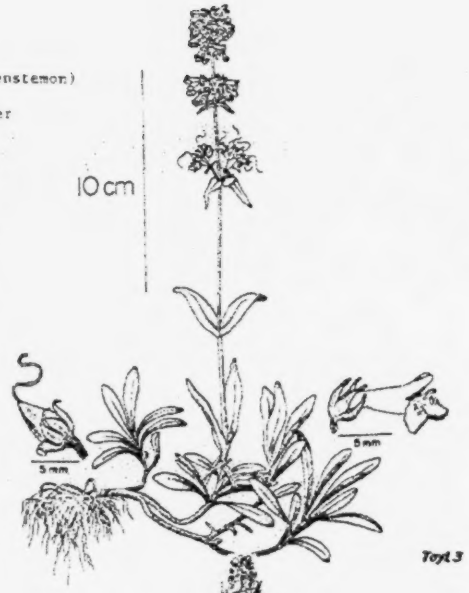
Penstemon procerus (Slender blue penstemon)

HERB - 5-40 cm tall, tufted, slender stemmed.

LEAVES - not toothed, basal leaves having petioles, elliptic or ovate up to 10 cm long and 1.5 cm wide stem leaves few, without petioles, smaller, opposite.

FLOWERS - arranged in 1 to several circular whorls, deep blue-purple, trumpet-shaped.

HABITAT - dry meadows and open or timbered-slopes from foothills to above timberline.



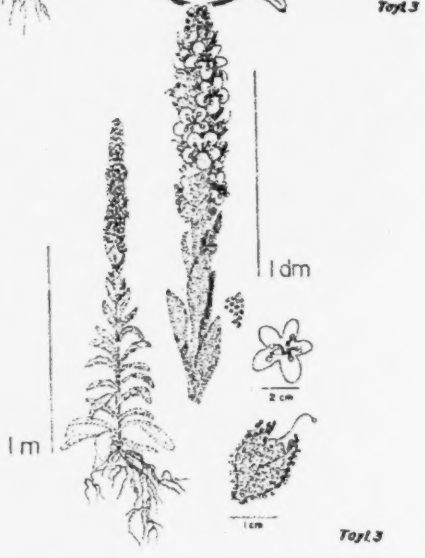
Verbascum thapsis (Great mullein)

HERB - biennial with erect stems to 2 m tall, densely covered with dense, woolly tomentum, distinctive yellow-green colour.

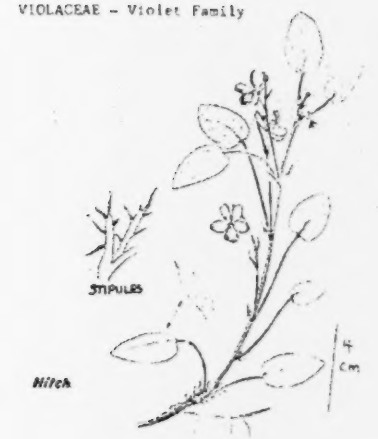
LEAVES - obovate-lanceolate to oblong, acute with rounded teeth; rosette leaves up to 45 cm long, stem leaves smaller and progressively reduced upwards.

FLOWERS - dense, terminal raceme, flowers are yellow, up to 3 cm wide, concave, blooms from June to August.

HABITAT - open, usually dry places.



VIOLACEAE – Violet Family



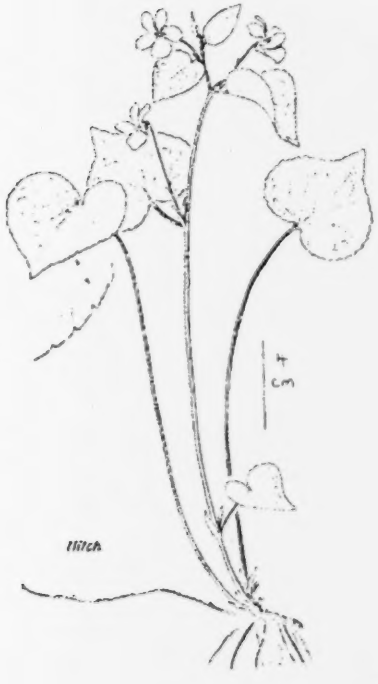
Viola adunca ssp. *adunca*
(Early blue violet)

HERB – perennial with short to elongate, slender rhizomes, usually stemless in early part of season later developing aerial stems.

LEAVES – oval-lance-shaped to kidney-shaped, margin finely round-toothed; stipules linear lance-shaped, entire to slender toothed, pubescent underneath.

FLOWERS – blue to deep violet, the lower three often whitish based.

HABITAT – in dry to moist meadows, woods and open ground, near timberline.



Viola canadensis (Canada violet)

HERB – perennial with short thick rootstock and often with slender, creeping stolons; stems 10–40 cm.

LEAVES – heart-shaped, long-stemmed, usually hairy on one or both surfaces, margin serrated.

FLOWERS – occurring on upper portion of stem, white with yellow base, purplish-tinged on outside.

HABITAT – in moist woodland and forest usually in loamy soils, alluvial flooplains, etc.

VIOLACEAE - Violet Family

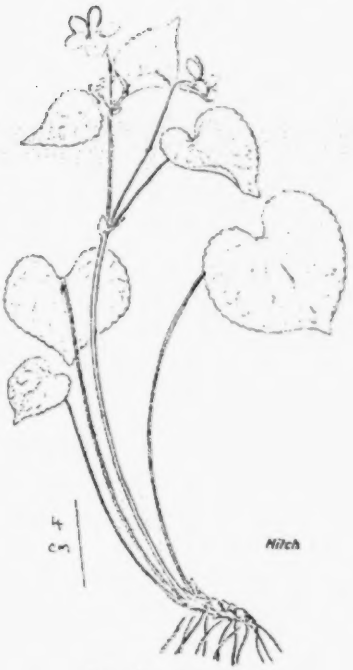
Viola glabella (Stream violet)

HERB - perennial with spreading scaly, fleshy rootstock; flowering stem leafless except on upper most section.

LEAVES - somewhat kidney-shaped to heart-shaped, serrated, without or more commonly with hairs, basal leaves with long stems.

FLOWERS - occurring mostly on upper portion of stem, yellow with 3 lower petals purplish-pencilled.

HABITAT - fairly moist woods or along streams; found in moist, rich forested sites.



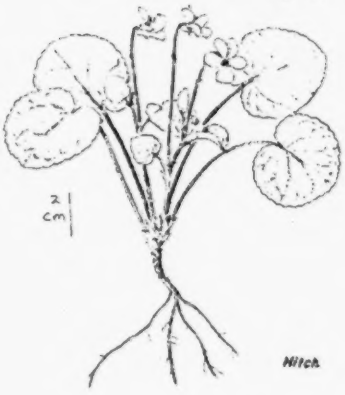
Viola orbiculata (Round-leaved violet)

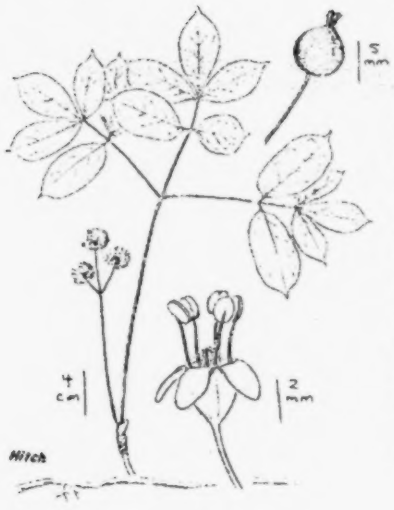
HERB - perennial with flowering stem not over 5 cm tall.

LEAVES - oval to nearly circular, thin serrated, often persistent over winter.

FLOWERS - lemon-yellow to gold, with 3 lower petals purplish-pencilled.

HABITAT - on alpine and montane slopes and in coniferous forests.





Aralia nudicaulis (Wild sarsaparilla)

HERB - widely rhizomatous, perennial herb with stout, erect, woody stems barely reaching soil surface.

LEAVES - generally single, 30-50 cm long, 3 times compound with leaflets pinnately compound and serrated.

FLOWERS - flowering stem naked, shorter than leaf and topped with 3-7 umbrella-shaped clusters or balls of greenish-white flowers.

FRUIT - dark purple berries.

HABITAT - moist shaded forests, medium to rich sites. The Bella Coola Indians formerly made a beverage by boiling the rhizomes of this plant in water; it also has similar medicinal properties as the tropical sarsaparilla.

Family: ARALIACEAE

Cornus canadensis (Canadian bunchberry)

HERB - low, widely rhizomatous, 5-20 cm tall.

LEAVES - 4-7 in terminal whorl, oval-elliptic, 2-8 cm long, green above, whitish beneath, veins parallel.

FLOWERS - in a solitary condensed cluster, with 4 white petal-like bracts surrounding a central cluster of small greenish-white to purplish flowers.

FRUIT - bright red drupes; although slightly pulpy they are sweet.

HABITAT - in dry to moist woods from sea level to subalpine.

Family: CORNACEAE

OTHER HERBS

Dodecatheon pulchellum
(Cusick's few-flowered shootingstar)

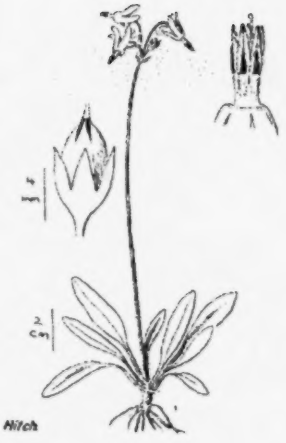
HERB - plants with very short erect rootstocks, smooth to glandular-hairy throughout, flower stalks, 5-40 cm long.

LEAVES - 2-15 cm long, blades oblanceolate to spatulate, margins smooth to somewhat toothed, narrowed gradually to winged petioles nearly as long as the leaf blade.

FLOWERS - 1-25, 5 merous (5 petals, 5 stamens, etc.) purple-lavender, the "tube" yellowish-orange.

HABITAT - grasslands and mountain meadows to moderate elevations.

Family: PRIMULACEAE



Epilobium angustifolium (Fireweed)

HERB - perennial from rhizome-like roots; stems usually simple, 1-3 m tall.

LEAVES - alternate, narrowly lance-shaped, veins visible on under surface.

FLOWERS - several, rose to purple, in elongated terminal cluster, narrow green to red dehiscent seed pods.

HABITAT - common on disturbed sites especially on burned sites; from sea level to subalpine.

Family: ONAGRACEAE

Cryptantha henriciodes
(Parsnip-flowered umbrella plant)

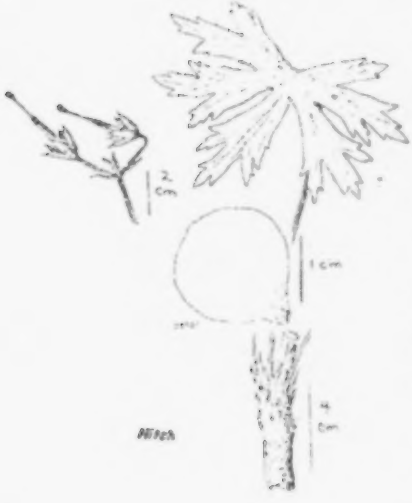
HERB - perennial with a freely branched shrubby base, forming clumps up to 60 cm broad and 10-40 cm tall, generally woolly throughout; the flowering stem has a whorl of leaf-like bracts about mid-length.

LEAVES - many, linear to linear-lanceolate usually acute and narrowed gradually to a slender petiole, usually grayish and woolly on both surfaces.

FLOWERS - in a conjested umbel (Flowers originate from one point) white to creamy- white or yellowish, occasionally pinkish.

HABITAT - gravelly to loamy soil of desert to ponderosa pine forest and rocky montane ridges to about 2000 m.

Family: POLYGONACEAE



Geranium viscosissimum
(Sticky purple crane's bill)

HERB - perennial lightly-haired plant with several stems.

LEAVES - 5-12 cm broad, sticky hairy, palmately lobed (5 lobes sometimes 7), lobes are sharply toothed.

FLOWERS - petals 14-20 mm long, rounded, pinkish lavender to purplish, finely veined, very sticky.

FRUIT - slender, pointed column with 5 lobes at the base.

HABITAT - from lowlands to well into the mountains.

NOTE: *Geranium richardsonii* lacks glandular pubescence and has white flowers.

Family: GERANIACEAE

OTHER HERBS

Geocaulon lividum (Northern comandra)

HERB - saprophytic, single stemmed with creeping thread-like, reddish rootstalk, 10-25 cm tall.

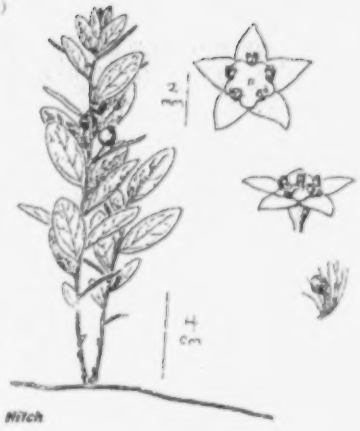
LEAVES - thin, oval, blunt-tipped, bright green or yellow-mottled, alternate.

FLOWERS - in slender stalked, 2-4 flowered axillary cluster; usually only centre flower fertile.

FRUIT - succulent, scarlet to florescent orange drupe; edibility is questionable, not recommended.

HABITAT - bogs and dry open woods to lower alpine slopes.

Family: SANTALACEAE



Linum lewisii (Western blue flax)

HERB - an open plant with mostly unbranched leafy stems, smooth, whitish, with a woody base, perennial, 1-60 cm tall.

LEAVES - alternate, linear, 1-3 cm long, 1 veined, acute to rounded at apex.

FLOWERS - on slender pedicels (which are recurved in fruit) petals 5, blue, deciduous.

HABITAT - from prairies to alpine ridges usually on dry well drained soil.

Family: LINACEAE

Lithospermum incisum (Columbia gromwell)

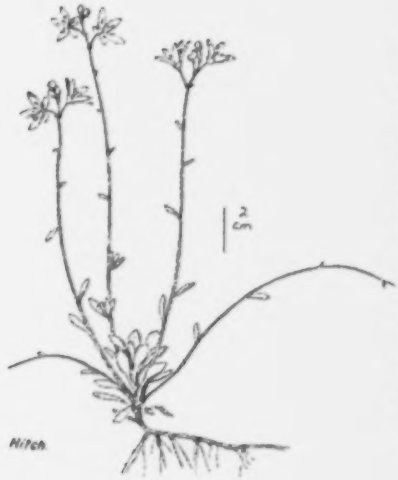
HERB - perennial rough hairy, 20-60 cm tall, with stems clustered on a coarse woody taproot, stems are very leafy.

LEAVES - all arise from the stem (cauline), the lower ones are reduced, the upper are without petioles, crowded, lanceolate to linear, 3-10 cm long, 2-10 mm wide, alternate, bunched together at the top of the stem, leaves bristly hairy.

FLOWER - in clusters, yellow, tinged with green, funnel-like.

HABITAT - open fairly dry places from the foothills and adjacent lowlands to moderate elevations in the mountains.

Family: BORAGINACEAE



Montia parvifolia (Small leaved montia)

HERB - succulent perennial often forming large patches, with 1 to several slender stoloniferous vegetative branches up to 40 cm long, and erect flowering stems,mostly 10-20 cm long.

LEAVES - basal leaves 1.5-3 cm long, obovate to oblanceolate, up to 2 cm broad; petioles usually as long as the blades; stem leaves several, alternate, usually smaller and narrower than basal leaves.

FLOWERS - 3-8 flowers in raceme, showy, light to deep pink or white with pink veins.

HABITAT - coastal Alaska southward in the rocky mountains.

Family: PORTULACACEAE

OTHER HERBS

Myosotis asiatica (Wood forget-me-not)

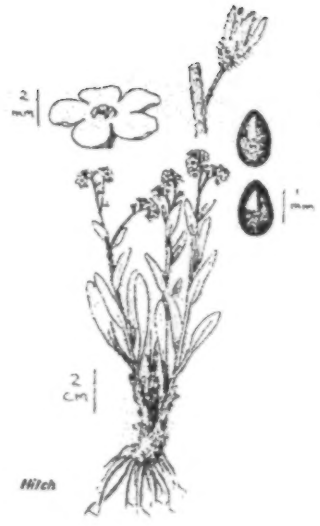
HERB - fibrous-rooted perennial with several or many stems 5-40 cm, from a short woody base, hairy throughout.

LEAVES - basal leaves oblanceolate, up to 13 cm long and 13 mm wide; stem leaves several, smaller, seldom over 6 cm long, mostly oblong to lance-elliptic and without petioles, soft hairy.

FLOWERS - showy, small, blue with yellow centres, clustered near the top of the stems.

HABITAT - meadows and moist open slopes at moderate to high elevations in the mountains.

Family: BORAGINACEAE



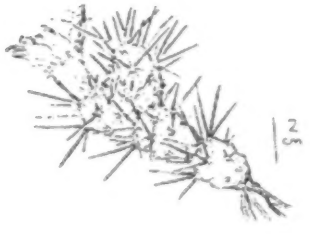
Opuntia fragilis
(Brittle prickly-pear cactus)

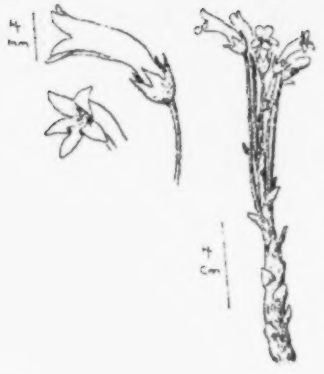
HERB - low matted clump of spiny jointed stems; the individual joins are broadest above the middle, slightly flat, easily detached; spines are 1.3-2.5 cm long, white or pale gray 1-9 in each cluster.

FLOWERS - 3.8 - 5 cm wide, near upper ends of joints, yellow or greenish.

HABITAT - dry open areas.

Family: CACTACEAE





Hitch

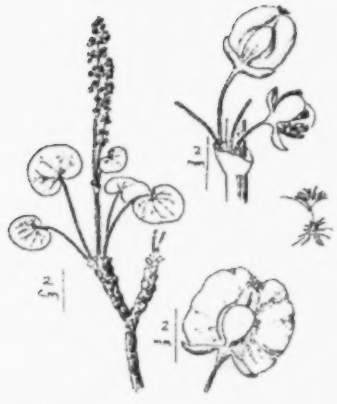
Orobanche fasciculata
(Clustered broomrape)

HERB - stems solitary or clustered, scaly slender to stout, 3-15 cm long, yellowish to purplish, coarsely hairy and glandular throughout.

FLOWERS - 4-10 flower stems 2-15 cm long, sometimes longer than the stem, the lower pedicels often longer than the upper, often forming a flat topped corymb of flowers; flowers are purplish or yellowish, have 2 broad upper lobes and 3 lobes below.

HABITAT - open slopes in the foothills and valleys, parasitic on sagebrush, eriogonums and rabbitbush.

Family: OROBANCHACEAE



Hitch.

Oxyria digyna (Mountain sorrel)

HERB - smooth, reddish-tinged, strongly acrid- juiced perennial from a fleshy taproot and branching crown; flowering stems are several 10-40 cm tall, leafless or with a single leaf below the flower.

LEAVES - chiefly basal, kidney to heart-shaped, with a bitter acid taste.

FLOWERS - panicle 5-15 cm long, flowers small, crowded, with slender pedicels, 1-3 mm long, green inconspicuous and unattractive.

FRUIT - prominently winged, compressed, oval achene, 4-6 mm broad.

HABITAT - moist ground usually on scree or in rock crevices.

Family: POLYGONACEAE

OTHER HERBS

Phacelia heterophylla
(Diverse-leaved phacelia)

HERB - biennial or short-lived perennial from a taproot with a single erect, often stout stem which is often surrounded by several lesser stems.

LEAVES - green or grayish, hairy bristly; leaves form a dense cluster varying in shape-some have one or 2 pairs of lobes or leaflets at the base of the blade; leaves are prominently veined.

FLOWER - white or light purplish, hairy, in thick fuzzy clusters.

HABITAT - in dry open places at low elevations.

Family: HYDROPHYLLACEAE

Hitch.

Phlox diffusa (Spreading phlox)

HERB - taprooted mat forming perennial up to 10 cm tall.

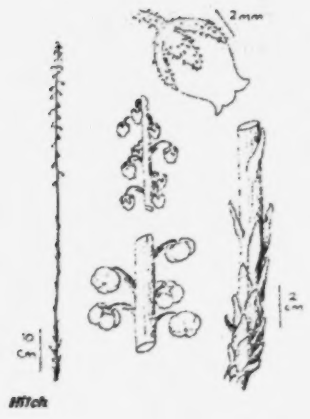
LEAVES - green, smooth, short and thin 5-20 mm long, 1-2 mm wide.

FLOWER - solitary and sessile at the ends of stems, white to pinkish or light bluish.

HABITAT - forests and open rocky slopes at moderate to high elevations in the mountains.

Family: POLEMONIACEAE

Hitch.



Pterospora andromedea (Pinedrops)

HERB - saprophytic plants, unbranched 30-100 cm tall.

LEAVES - scale-like leaves, yellowish to reddish brown, dried stems remaining for one or more years.

FLOWERS - pale yellow, urn-shaped, in an elongated raceme, flowers 5-8 mm long, drooping on their stalk.

FRUIT - depressed globes capsule to 12 mm broad.

HABITAT - deep humus in coniferous forests, especially under pine.

Family: MONOTROPACEAE

Sedum lanceolatum (Lance-leaved stonecrop)

HERB - smooth perennial with numerous sterile shoots and basal rosettes; the flowering stems are 5-20 cm tall.

LEAVES - dull green, often reddish tinged, without petioles, alternate, linear, 5-20 mm long very fleshy (fleshy casting), deciduous or withered when plant is flowering.

FLOWERS - in compact clusters (cymes); petals yellow, narrowly lanceolate.

HABITAT - open exposed places usually on rocky or on gravelly rocky soil, from sea level to subalpine areas.

Family: CRASSULACEAE

OTHER HERBS

Trientalis latifolia
(Broad-leaved starflower)

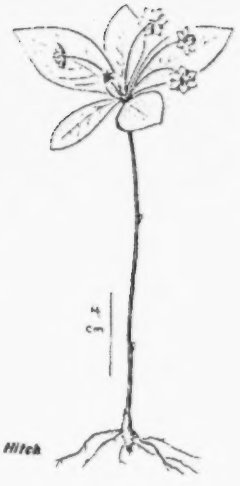
HERB - perennial, 10-25 cm tall from thickened vertical tubers.

LEAVES - in a terminal whorl, 3-10 cm long, 1.5-4 cm broad, ovate to elliptic, with short petioles.

FLOWERS - several, pink on long pedicels.

HABITAT - woods and prairies.

Family: PRIMULACEAE



Valeriana sitchensis (Sitka valerian)

HERB - fibrous-rooted perennial from a stout, branched rhizome, mostly 0.3-1.2 m tall, smooth or occasionally short hairy, rhizomes highly aromatic.

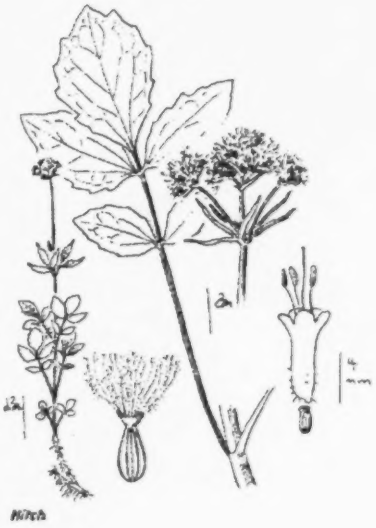
LEAVES - mainly stem leaves, 2-5 pairs of opposite leaves, the lowermost pairs being more or less reduced. Each leaf consists of up to 5 leaflets mostly toothed, which includes 1 or 2 pairs of smaller lateral leaflets with acute apices, and a terminal leaflet which is larger and often rounded. The terminal 3 leaflets are characteristic of this plant.

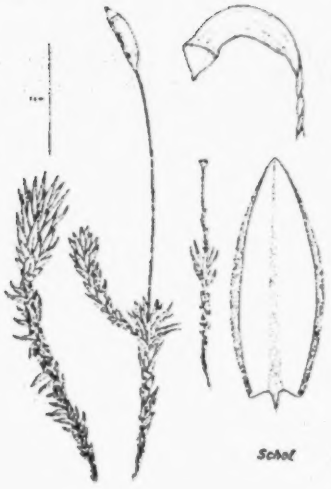
FLOWER - a head of tiny, white or pinkish sweet scented flowers.

FRUIT - achene 3-6 mm long with plumose pappus.

HABITAT - moist open wooded places at middle and upper altitudes in the mountains, often in wet meadows.

Family: VALERIANACEAE





Aulacomnium palustre

GAMETOPHYTE - bright yellow-green, not glossy, forming tufts of erect plants, rarely branching; stems green densely matted with red rhizoids, leaves lance-shaped to oval, crisped when dry, costa distinct as a pale green ridge on back of leaf.

SPOROPHYTE - at apex of main shoot; seta strongly twisted when dry, capsule red-brown inclined to nearly erect, often curved, cylindrical, strongly grooved longitudinally; peristome yellowish to pale brown, curved inward when dry.

HABITAT - boggy, swampy and seepy areas, occasionally on humus or rotten wood; probably throughout province.

Dicranum fuscescens

GAMETOPHYTE - dark green to light green, slightly glossy, erect unbranched stems, forming loose tufts 1-5 cm deep; stem red-brown; leaves lance to scytne-shaped, crisped and curly when dry, costa forming a keel on back of leaf.

SPOROPHYTE - solitary at tip of main shoot; seta yellow to brown, smooth, twisted when dry; capsule inclined, grooved and contracted below mouth when dry and mature, cylindrical, curved, brown; operculum bears a distinctly narrowed snout; peristome teeth red, incurved when dry.

HABITAT - usually on wood, on logs, or as an epiphyte, sometimes on forest floor or humus of cliff ledges; occurs throughout province.

MOSSES

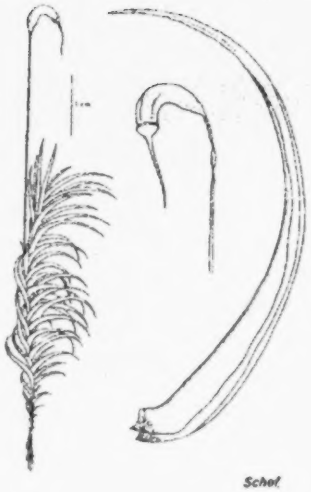
Dicranum scoparium

GAMETOPHYTE - light green to golden-green, strongly glossy, forming loose tufts of erect unbranched plants; stems red-brown leaves lance-shaped often scythe-shaped; not crisped when dry; costa forming a ridge on the back of the leaf ; larger than *D. fuscescens* with longer leaves.

SPOROPHYTE - at tip of main shoots; seta yellow to brownish, smooth, twisted when dry; capsule inclined, cylindrical, curved, brown, rarely grooved when dry operculum bears a distinctly narrowed snout, often red; peristome teeth red-brown, incurved when dry.

HABITAT - on rotten logs, exposed cliff ledges and sometimes on forest floor, throughout the province except in arid regions.

NOTE: *Dicranum polysetum* is similar except it is larger and the leaves are extremely wavy and not as sickle-shaped.

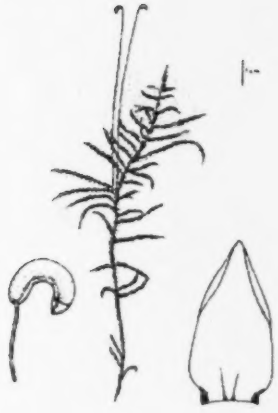


Hylocomium splendens

GAMETOPHYTE - dull yellow to brownish-green, glossy, creeping, with current year's growth arising arched from middle of previous year's growth producing a "step-like" appearance; branches also secondarily branched; stem red, often hairy; branch leaves decreasing in size towards end of branch; stem leaves with ovate twisted tip.

SPOROPHYTE - uncommon; seta red, smooth, not twisted when dry; capsule inclined, oval, brown; operculum conic; peristome teeth brown, incurved when dry, double.

HABITAT - in coniferous forest throughout the province; sometimes in tundra, on the forest floor, and decaying wood. Infrequent only at high elevations.



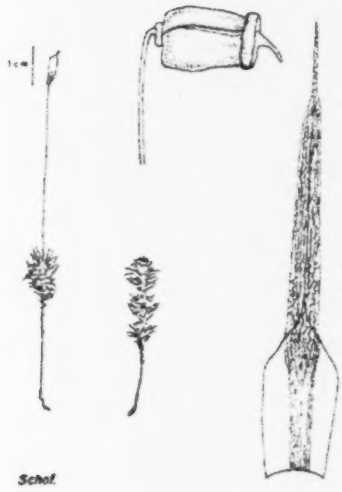
Schof.

Pleurozium schreberi

GAMETOPHYTE - forming thick mats of creeping to sub-erect, regularly pinnately branched plants, glossy yellow to dull green; stems red-brown; leaves oval, branch tips distinctly pointed.

SPOROPHYTE - seta red-brown, smooth, somewhat glossy, twisted to some extent when dry; capsule cylindrical, horizontal and often curved; operculum conic; peristome double, red-brown.

HABITAT - on the forest floor, decaying wood. A very common moss on all forested sites.



Schof.

Polytrichum juniperinum

GAMETOPHYTE - dark green to pale bluish-green to red-brown, not glossy except at leaf bases, forming loose to tight tufts of wiry unbranched stems; leaves needle-like, spreading when moist, tightly overlapping when dry, tipped with reddish-brown stiff hair; stems red-brown obscured by leaf bases except at base of stem, plants 2-10 cm tall; rhizoids confined to lower part of stem; female plants separate.

SPOROPHYTE - solitary at the tips of main stems, seta wiry, red-brown, glossy, not twisted when dry; capsule rectangular to squarish, with 4 conspicuous angles.

HABITAT - on sterile earth or humus, usually acid, generally on dryish or well drained sunny sites, sometimes in bogs, often on thin earth over rock; occurring in coniferous forest at all elevations, up to subalpine and alpine; common throughout the province. Not occurring regularly in the forest except on dry sites, common on clearcuts, other disturbed sites and on upturned roots.

NOTE: *Polytrichum commune* is similar but is larger and not whitish-green in colour.

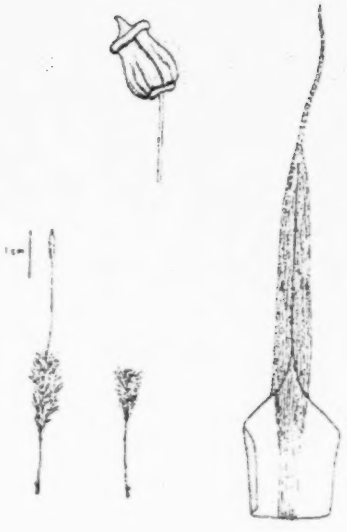
MOSSES

Polytrichum piliferum

GAMETOPHYTE - dark green to bluish-green to red-brown, somewhat glossy, unbranched, wiry, erect stems forming dense tufts; leaves overlapping to spreading, needle-like, tipped with a conspicuous white hair; stems red brown but concealed by close-lying leaves; plant 0.5-3 cm tall; rhizoids confined to stem base; male and female plants separate.

SPOROPHYTE - solitary at tip of stem; seta wiry, red-brown, glossy, not twisted when dry; capsule not glossy, pale to deep red-brown, distinctly four-angled, squarish to rectangular, somewhat inclined when mature, contracted to some extent below mouth when dry; operculum conic to snouted; whitish peristome teeth incurved; calyptra hairy, shed at maturity.

HABITAT - sterile earth or humus, acid, dryish sites, generally in extremely sunny sites; relatively dry habitats; frequent at all elevations.

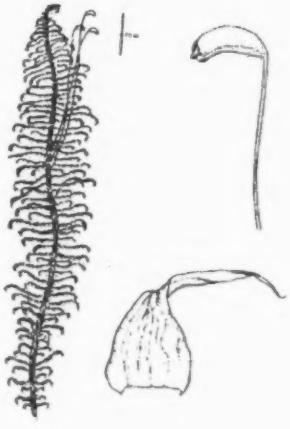


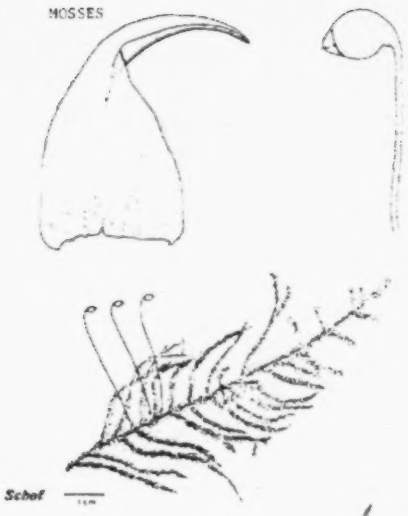
Ptilium crista-castrensis

GAMETOPHYTE - pale green to yellowish to golden yellow; regularly pinnately branched, "feather-like" appearance, near-erect to reclining often forming soft mats; stems yellowish to pale green; stem leaves are oval, tapering gradually to a sharp point, sickle-shaped, pleated and most are oriented to one side of the stem.

SPOROPHYTE - lateral, well behind apex of shoot, usually more than one on each shoot; seta red, slightly glossy, twisted when dry; capsule red-brown, strongly curved when mature, contracted below mouth when mature; operculum conic; peristome double, outer teeth dark red-brown, inner colourless.

HABITAT - most frequently on forest floor and on rotting wood in coniferous forests. Rare in coastal zones, a dominant in the interior.





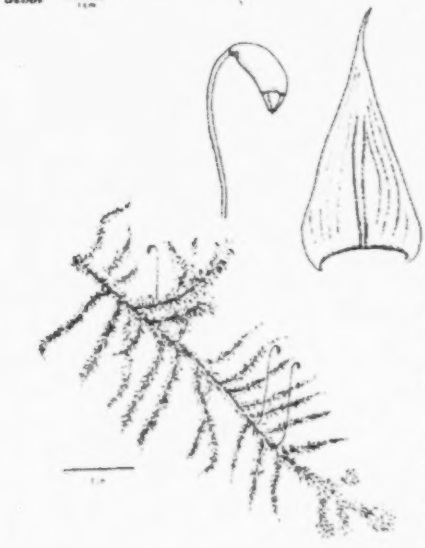
Schof

Rhytidiadelphus loreus

GAMETOPHYTE - light green to yellowish-green, forming dense interwoven glossy mats of creeping plants, branching irregularly to regularly pinnate; branches sharp-pointed to blunted; stem red-brown; stem leaves 4 mm long, triangular, strongly pleated toward base, the tip usually recurved not noticeably, branch leaves oval, pleated at base; leaves angle outward from stem and in some cases are perpendicular to it.

SPOROPHYTE - several per shoot, far back from the tip of the main shoot, perpendicular to main shoot; seta red-brown, twisted when dry, glossy; capsule red-brown, oval to nearly spherical, inclined; operculum conic; peristome double, outer teeth red-brown.

HABITAT - on forest floor, over humus, and on rotten logs, occasionally on cliff shelves and boulders. Much less frequent towards the interior.



Schof

Rhytidiadelphus triquetrus

GAMETOPHYTE - forming thick pale green to yellow-green carpets of creeping irregularly to regularly branched shoots, more robust than *R. loreus*; tips of the main shoots blunt, with a tuft of divergent leaves resembling a dog's paw; stems red-brown; leaves triangular, 6 mm long, shallowly pleated wet or dry; costa double.

SPOROPHYTE - seta glossy, somewhat corkscrew twisted when dry; capsule inclined, curved and not glossy; operculum conic; peristome double, outer teeth red-brown.

HABITAT - frequent in both shaded and somewhat sunny sites, in both deciduous and coniferous forests, in dry to humid localities, on boulders, logs among grasses and on the forest floor; province-wide.

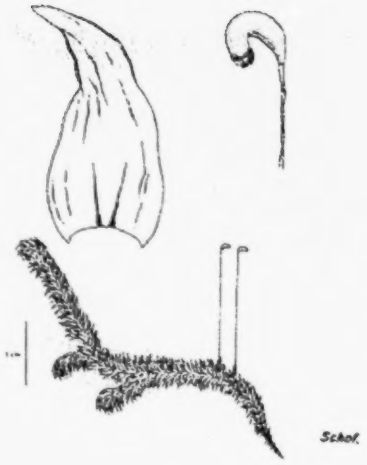
MOSSES

Rhytidiopsis robusta

GAMETOPHYTE - irregularly, sparsely branched, creeping stems sometimes forming extensive mats, golden to yellow-green; tips of branches hooked with branches having the appearance of a furred paw; leaves with deep irregular pleats and wrinkles, ovalish tapering to a sharp or blunt often serrated tip; stems green to yellowish plants have a "pipecleaner" appearance.

SPOROPHYTE - located far back from stem tip and perpendicular to it; seta light to dark red-brown, glossy, twisted when dry, capsule strongly curved and inclined; operculum conic; peristome double teeth pale yellow.

HABITAT - on forest floor, but only dominant at higher (montane and subalpine) elevations.

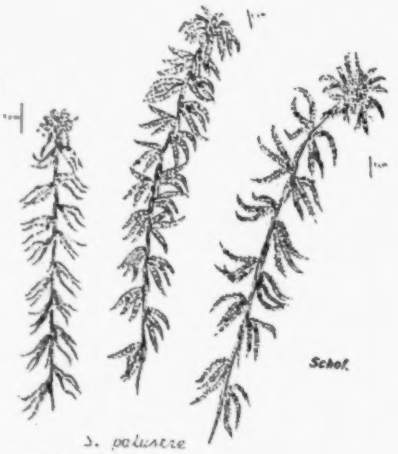


Sphagnum spp.

GAMETOPHYTE - mostly erect, forming loose to tight mats and tufts; lateral branches many, in conspicuous clusters of 2-5 along the main stem and recurved; terminal branches crowded into a tight head; branch leaf cells appearing as a conspicuous network when observed with a hand-lens; pale whitish green to brilliant red in colour.

SPOROPHYTE - somewhat spherical and terminal.

HABITAT - from shady, swampy and alluvial sites to open bogs, mostly in wet conditions; often forming the dominant ground cover; *Sphagnum* spp. occur from sea-level to subalpine elevations.



S. palustre

S. capillaceum

S. squarrosum

LICHENS

Lichens are not simple plants but instead are a composite of algae cells and fungal threads forming, through symbiosis, a unique organism. The fungus receives food (sugars) from the photosynthetic algae and the alga receives protection from environmental extremes from the fungus. Those lichens which contain blue-green algae are able to fix nitrogen.

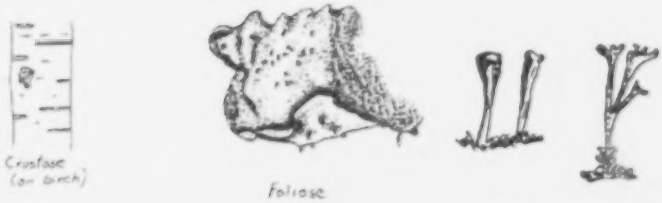
Lichens are utilized as forage by deer and are important winter feed for caribou. It is for this reason and their diagnostic importance in certain ecosystems that recognition of several lichens is useful.

On the basis of growth form characteristics at least three categories of lichens may be distinguished:

a) *Crustose* - scab-like formations directly attached to the substrate (rock, bark, especially important on mineral soil as an anti-erosion agent).

b) *Foliose* - leaf-like and lobed. Unlike *crustose* lichens they usually exhibit a distinct lower surface which is broadly but indirectly attached to the substrate by short "roots" or rhizines.

c) *Fruticose* - hair-like, shrubby to stick-like often growing on branches (hair-like) or on terrestrial substrate (stick-like forms).



LICHENS

SCB

Alectoria sarmentosa

LIFE FORM - Fruticose

DISTINCTIVE FEATURES - hair-like mats up to 30 cm long, pendulous and tangled, pale greenish-yellow colour, extreme tips of branches black (use hand lens).

HABITAT - over branches in mesic to moist conifer forests, especially in ICH and ESSF zones.

a

b

SCB

Cladonia spp.

LIFE FORM - Fruticose

DISTINCTIVE FEATURES - consisting of hollow upright projections (podetia) ranging in shape from golf tee-like (a), to intricate structures composed of many small turrets (b), small leaf-like scales (squamules) are often basal and in some species extend up the podetia.

HABITAT - widespread, does not lend well to ecological interpretations.

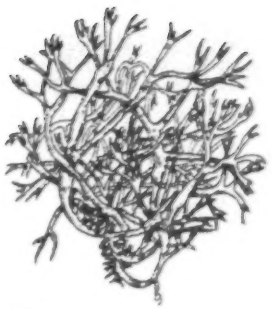
LICHENS

Letharia vulpina

LIFE FORM - Fruticose

DISTINCTIVE FEATURES - shrub-like, 5-10 cm long, the branches rather angular, bright sulphur yellow colour, "gritty" to the touch.

HABITAT - over trees in exposed sites, especially in the PPBG and IDF zones, though also locally abundant in the upper ESSF zone.



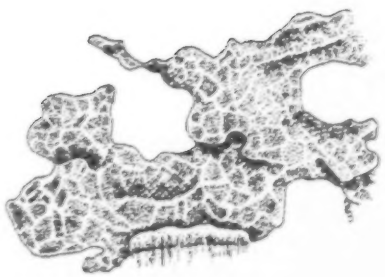
P. Frank

Lobaria pulmonaria

LIFE FORM - Foliose

DISTINCTIVE FEATURES - 10-25 cm broad, upper surface lobed, regular pitted and ridged ressembling vertebrate lung tissue; upper surface light brownish-green turning bright green when wet, lower surface tan with white mottling.

HABITAT - over trees (and rocks) in humid forests, especially in the ICH, but also in moister parts of IDF.



P. Frank

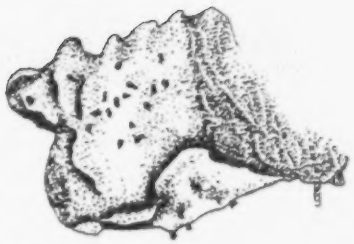
LICHENS

Peltigera spp.

LIFE FORM - Foliose

DISTINCTIVE FEATURES - Ranges from a flat widely lobed structure to a semi-vertical highly lobed structure; has distinct upper and lower surfaces with the upper surface ranging from bright green to light gray; the lower surface often has extruding veins and root-like hairs (rhizines) which attach the lichen to the substrate.

HABITAT - on humus, bare soil or moss.



P. Frost

COMMON SPECIES

Peltigera aphthosa - Upper surface green (bright green when moist). With dark freckle like warts; lower surface dirty whitish, the veins pale and indistinct. Common in the IDF, ICH, MS and ESSF, less frequently in the AT.

Peltigera canina - Upper surface light brown with a whitish lustre when dry, covered with a fine tomentum (woolliness) especially towards the tips. The lobes are generally bent downwards. The lower surface has pale narrow raised veins and long conspicuous rhizines. It is common throughout the region.

Peltigera rufescens - Similar to *P. canina* but diminutive; has upturned and smaller lobes, a similar woolly upper surface, more conspicuous veins and dark densely branched rhizines on lower surface. Found on ground in dry open sites especially in the PPBC and IDF.

APPENDIX 1

COLLECTING AND PRESSING PLANT SPECIMENS

Materials:

- polyethylene (plastic) bags; several of the large freezer size and one or two 2' x 3' size.
- newspaper - lots of it.
- plant press; consisting of two wooden backs, two straps or a length of cord and several sheets of corrugated cardboard separators.

Collecting:

Plant specimens should be collected and kept in plastic bags until ready for pressing. This will greatly aid in keeping specimens fresh. In dry weather a small amount of water or damp moss can be included with the specimens to keep them from drying out. Only those specimens collected from the same area or plot should be kept together in the same plastic bag. A sheet of paper with the plot number or sample location should be included in each bag of specimens.

Plant collecting is best done in dry weather, although in many areas of the province the field seasons are anything but dry, and in which case the best must be made of the existing situation. Plants collected in wet weather have a relatively higher content of water and will take proportionally longer to dry in the press. Also, if not handled properly the specimens could become mouldy and discoloured. Generally the faster the drying the better the plant is preserved.

A plant specimen should include all those plant parts which are necessary for its proper identification. Herbaceous plants should include at least part of the stem, leaves, fruit, flowers and, if possible, part of the root system. Special attention should be made to collect a specimen which best represents as many of the plant features as possible. Grasses, sedges, and rushes require that at least part of the root system be included. In collecting mosses attention should be given to collecting specimens with both gametophyte and sporophyte if present, and similarly in collecting lichens both the vegetative part and fruiting body should be included. Tree and shrub specimens should include twigs, leaves, flowers or catkins as well as a description of the whole plant. When collecting all but the larger plants, care should be taken in keeping the plant intact. This will avoid getting parts of one plant confused or mixed with another.

With each specimen the following data should be collected:

- location where the specimen was growing -- if collected in a vegetation plot the plot number is sufficient; otherwise an accurate a location description as possible is required.
- date specimen was collected.
- collectors name.
- habitat description — needed for those specimens not collected in vegetation plots -- such information as moisture status, wet

to dry; aspect; whether on a disturbed site or not; whether shaded or not; etc. -- for mosses, regardless of whether they were collected in a vegetation plot or not, a substrate description is required, i.e. whether it was growing on humus, rotting wood, in mineral soil, on rock, etc.

- a description of those plant features which may change during pressing, flower colour being a good example.

Pressing:

Each specimen is laid in a folded sheet of newspaper and arranged such that it will fit on an 11" x 16" sheet of paper (the size commonly used in mounting specimens in most herbaria). Long specimens may have to be folded or cut in order to accommodate them in the press. Data collected with the specimen should be written along the margin of the newspaper to avoid loss of data. Also to avoid confusion no more than one species (one type of plant) should be pressed in a folder, although several specimens of the same species from the same location can be pressed in the same paper folder.

The press is made up as follows -- on one of the wooden backs is laid a cardboard separator, then a specimen in its newspaper folder, then another cardboard sparator, then another specimen and so on until all the material to be pressed is in (Fig. 1). A second wooden back is then placed on top and the whole bundle is bound together with either a pair of straps or a length of cord. The press should be opened and inspected daily and the dried specimens removed. During the inspection of the press material, if it is noted that any of the folders are damp or wet they should be replaced with dry newspaper making sure to transfer all the data onto the new newspaper sheet.

Moss and lichen specimens generally are not pressed but are kept in small paper bags or paper envelopes. The collection data is recorded on the outside of the bag or envelope.

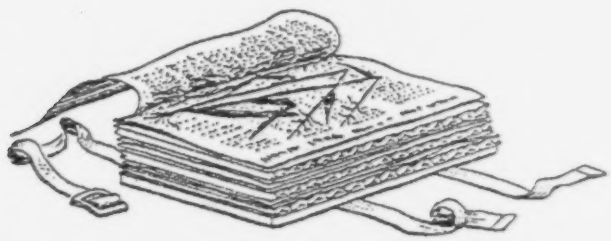


Figure 1

Generally, the faster the drying the better the press. When plants are dried quickly there is less chance of mildew or mould occurring. In good weather the press can be placed in a sunny and draughty location during the day and brought in in the evening. During periods of poor weather the press can be placed near a stove or heater being careful that the press doesnot receive so much heat that both it and the specimens become scorched. It is important that air flow freely around the press and through the corrugations in the cardboard. This is best achieved by placing the press on its long edge and raising it off the ground (Fig. 2).

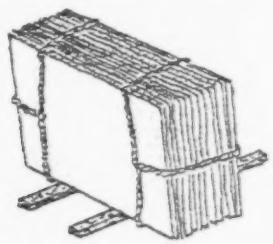


Figure 2

Storing:

Dried specimens in their labelled newspaper folders should be kept in a cardboard box (preferably one with a lid to keep out dust and rodents) and stored in a cool dry place.

Reference: Much of the information in this section was taken from: Museum Methods Manual #1 - Plant Collecting for the Amateur by T.C. Brayshaw.

APPENDIX II

LIST OF LOW WOODY SPECIES AND SPECIES OF DOUBTFUL LIFEFORM ASSIGNED TO THE HERB (C) LAYER.

This list includes woody species (indicated with *) as well as herbaceous species often considered as low shrubs:

Andromeda polifolia*

Anemone multifida
Apocynum androsaemifolium
Apocynum cannabinum
Apocynum pumilum
Apocynum sibiricum

Arctostaphylos alpina*
Arctostaphylos rubra*
Arctostaphylos uva-ursi*

Aruncus dioicus

Asclepias ovalifolia
Asclepias speciosus

Cassiope lycopodioides*
Cassiope mertensiana*
Cassiope stelleriana*
Cassiope tetragona*

Chamaerhodos erecta

Chimaphila menziesii*
Chimaphila umbellata*

Conandra umbellata

Cornus canadensis
Cornus suecica
Cornus unalaschkensis

Draba spp.

Dryas drummondii
Dryas integrifolia
Dryas octopetala

Empetrum nigrum*

Eriogonum androsaceum
Eriogonum flavum
Eriogonum heracleoides
Eriogonum niveum
Eriogonum ovalifolium
Eriogonum pauciflorum
Eriogonum umbellatum

Fragaria chiloensis
Fragaria vesca
Fragaria virginiana

Galium boreale

Gaultheria humifusa*
Gaultheria hispidula*
Gaultheria ovatifolia*

Geocaulon lividum

Kalmia microphylla ssp. microphylla*

Linnaea borealis*

Lithospermum incisum
Lithospermum ruderale

Loiseleuria procumbens*

Luetkea pectinata*

Orthilia secunda

Penstemon davidsonii*
Penstemon ellipticus*

Phlox caespitosa

Phyllodoce empetriformis*
Phyllodoce glanduliflora*

Polygonum cuspidatum
Polygonum paronychia*
Polygonum polystachyum
Polygonum sachalinense

Pyrola spp.

Rhododendron lapponicum*

Rubus arcticus
Rubus chamaemorus
Rubus lasiococcus
Rubus nivalis*
Rubus pedatus
Rubus ursinus*

Salix arctica*
Salix cascadensis*
Salix polaris*
Salix reticulata*
Salix stolonifera*

Saxifraga bronchialis
Saxifraga caespitosa
Saxifraga flagellaris
Saxifraga oppositifolia
Saxifraga tricuspidata

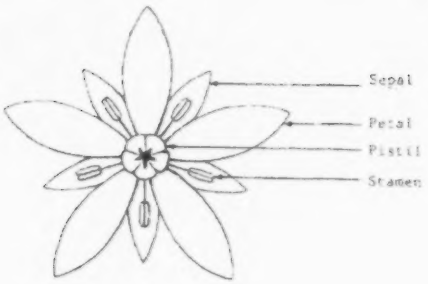
Sibbaldia procumbens

Vaccinium caespitosum*
Vaccinium oxycoccus*
Vaccinium scoparium*
Vaccinium vitis-idaea*
Vaccinium myrtillus

GLOSSARY

FLOWER STRUCTURE

Viewed from above:

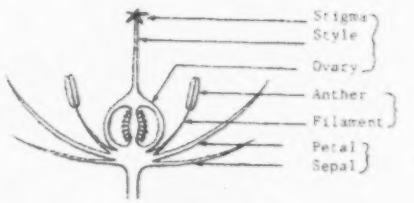


Calyx - collectively all the sepals of a flower

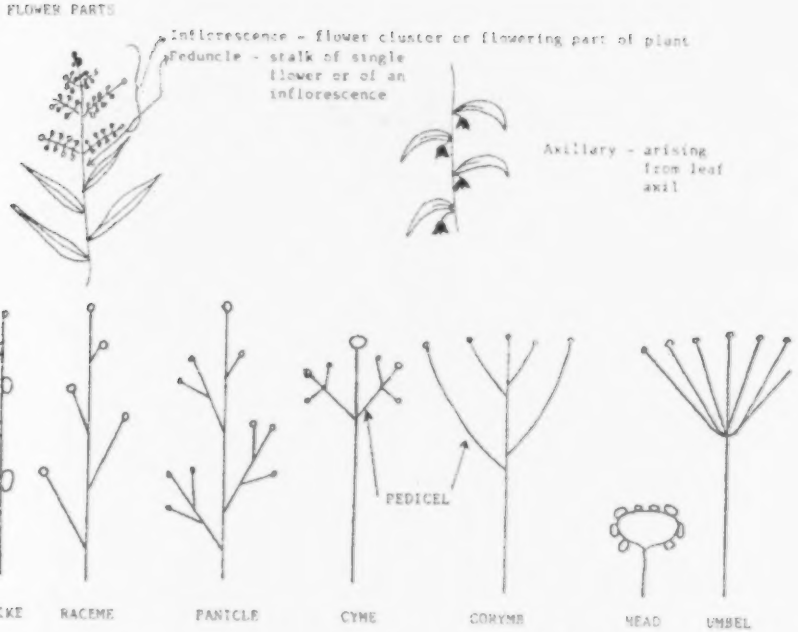
Corolla - collectively all the petals of a flower

} perianth

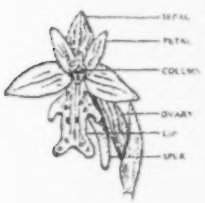
Longitudinal section:



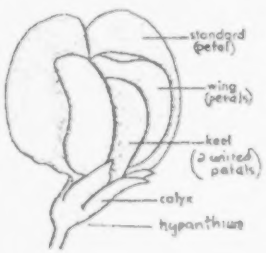
FLOWER PARTS



Flower Parts of
Orchidaceae (Orchid Family)



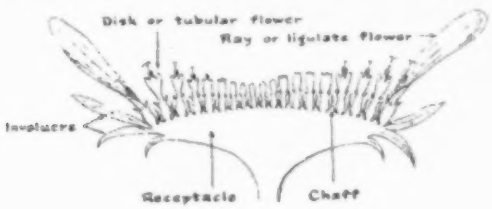
Flower Parts of
Fabaceae (Pea Family)



COMPOSITES - Asteraceae (Aster Family)

Features of the *Asteraceae* (Aster or Sunflower Family)

Members of this family are called "composites" because what seems to be an individual separate flower is actually a complex or composite of many flowers in a head united by a common receptacle and surrounded by a whorl of what appear to be sepals of the flower but are, in fact, bracts (involucre).

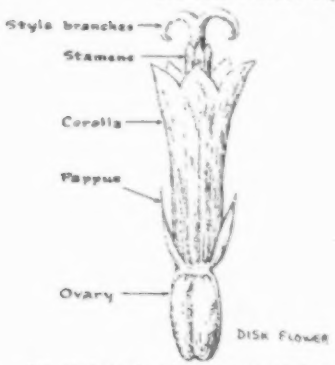


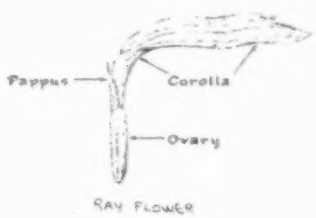
The heads can be of three forms:

(1) discoid - when all the flowers have the petals fused into tubular corollas (all disk flowers) e.g. Tansy (*Tanacetum vulgare*)

(2) ligulate - when the corollas are all strap-shaped (all ray flowers) e.g. Dandelion (*Taraxacum officinale*)

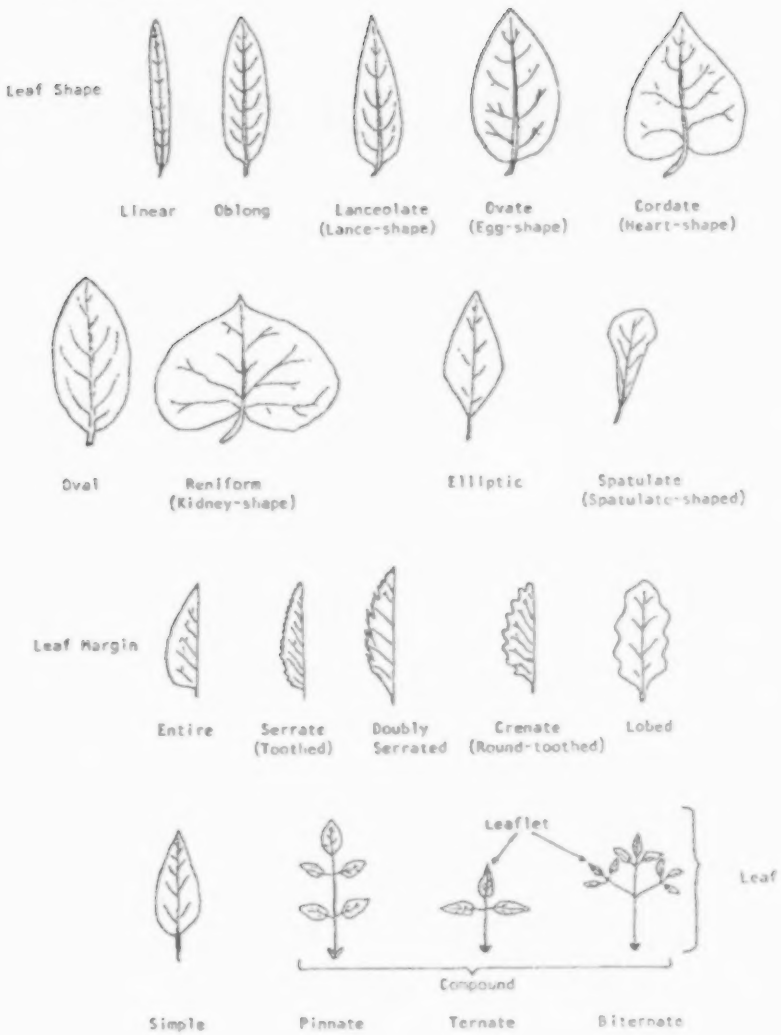
(3) radiate - when the outer corollas are ray flowers and the inner ones are disk flowers e.g. Daisy (*Leucanthemum vulgare*)





The receptacle which supports the flower head is often covered with bracts or scales known as chaff. Surrounding each flower may be a scaly spiny or hair-like structure call the pappus.

LEAF TERMINOLOGY



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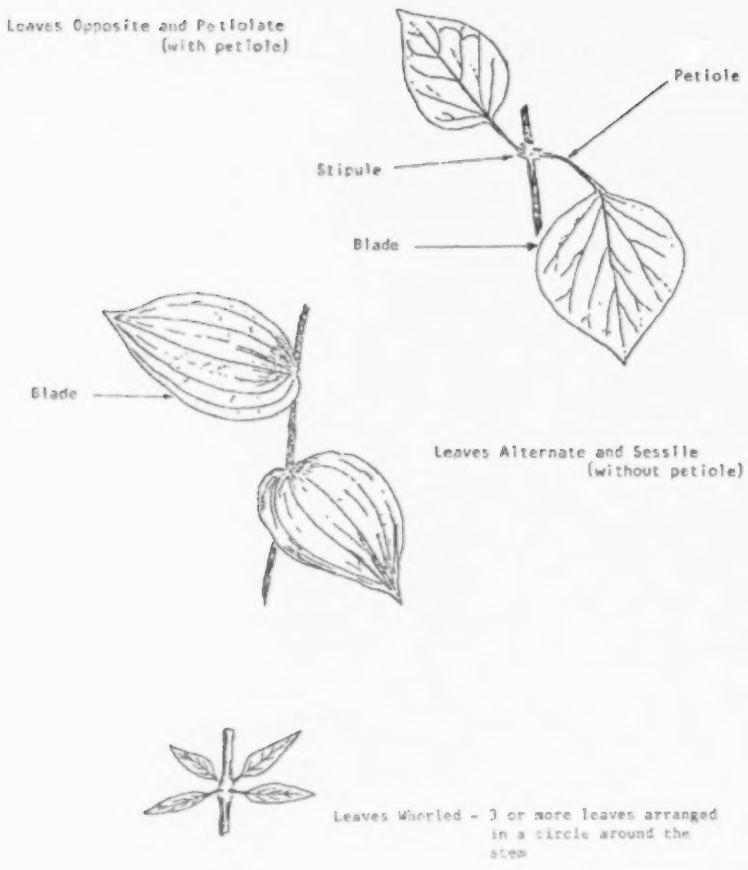

Leaves Whorled - 3 or more leaves arranged in a circle around the stem

GLOSSARY

achene - the most generalized type of dry indehiscent fruit.

acuminate - gradually and concavely tapered to a narrow tip or sharp point.

adnate - grown together, or attached; applied only to unlike parts.

alternate - situated singly at each node, as the leaves; situated regularly between organs of another kind, as stamens alternate with petals.

annual - a plant which germinates, flowers and seeds in a single season.

anther - the part of the stamen which bears the pollen.

apex - the tip of an organ.

apical - at the tip or top of an organ or plant

apophysis - the swollen basal portion of a sporophyte capsule of a moss.

appressed - lying close and flat against.

ascending - growing obliquely upward, or upcurved.

axil - the point of the angle formed by the leaf or petiole with the stem.

axillary - located in or arising from an axil.

basal - situated at, or pertaining to, the base.

beak - a prolonged, slender tip on a thicker organ such as a fruit or seed.

berry - a fleshy fruit, developed from a single pistil, fleshy throughout.

blade - the expanded part of a leaf or petal.

bract - a specialized leaf from the axil of which a flower arises; any reduced or modified leaf associated with an inflorescence.

bracteate - having bracts.

bristle - a stiff hair or any similar outgrowth.

bulb - a short, vertical, underground shoot which has modified leaves or thickened leaf bases developed as food storage organs.

calyptera - the cap-like covering of the sporophyte capsule of a moss.

calyx - all the sepals of a flower, collectively.

capsule - a dry, dehiscent fruit composed of more than 1 carpel or the spore bearing portion of a moss sporophyte.

chaff - thin dry scales.

ciliate - fringed with marginal hairs.

clasping - partly or wholly surrounding the stem.

cleft - cut about half way to the midrib or base, or a little deeper; deeply lobed.

compound leaf - one with 2 or more leaflets.

concave - shallowly hollowed; saucer-like.

conic - cone-shaped.

cordate - heart-shaped.

corm - a short, vertical, underground stem that is thickened as a perennating storage organ.

corolla - all the petals of a flower, collectively.

costa - the midrib of a moss leaf.

crisped - irregularly curled or hooked; referring to leaves which, when dry, become very twisted and contorted.

culm - the aerial stem of a grass or sedge.

deciduous - falling after completion of the normal function; falling at maturity.

declined - curved downward.

decurrent - extending down and adnate to the stem.

dehiscent - opening at maturity; opening spontaneously when ripe along regular lines of suture.

deltoid - shaped like an equilateral triangle.

depressed - more or less flattened from above; pressed down.

dichotomous - branching by constantly forking in pairs.

dilated - expanded or flattened.

discoid - resembling a disk; in the composites, with the flowers of a head all tubular and ♂ or functionally ♂.

disk - in the composites, the central part of the head, composed of tubular flowers.

dissected - deeply and often repeatedly divided into many smaller or more slender parts.

divergent - inclining away from each other.

dorsiventral - with distinct upper and lower surfaces, on front and back; flattened with the 2 flattened sides unlike.

drupe - fleshy one-seeded indehiscent fruit, with the seed enclosed in a strong pit or stone.

drupelet - one drupe in a fruit made of aggregate drupes, as in the raspberry.

elliptic - oval in outline, narrowed to the rounded ends and widest at or about the middle.

entire - not toothed or otherwise cut.

fleshy - thick and juicy.

flexuous - bent in a zigzag manner.

floret - a small flower especially one in a dense cluster.

foliolate - having leaflets.

follicle - dry fruit from a single carpet that dehisces along one side only.

frond - a leaf, especially of a fern.

gametophyte - the sexually reproducing portion or generation of a plant; in mosses and liverworts, the conspicuous main body of the plant.

gemma - bud that develops into a new plant.

glabrous - smooth, without hairs or glands.

gland - a spot on the surface of an organ or at the end of a hair which produces a sticky or greasy substance.

glandular - having glands.

head - an inflorescence of sessile or subsessile flowers crowded closely together at the tip of a peduncle.

herb - a plant, either annual, biennial, or perennial with the stems dying back to the ground at the end of the growing season.

herbaceous - pertaining to a herb; leaflike in texture and colour; or not woody.

imperfect - a flower losing either stamens or pistils.

incised - rather deeply and sharply (and often irregularly) cut.

inclined - leaning over (referring to moss capsule orientation), the capsule oriented at an obtuse or right angle to the seta.

indehiscent - not dehiscent, remaining closed at maturity.

indusium (indusia-collective term) - an outgrowth covering and protecting a sorus.

inflorescence - a flower cluster of a plant, or the arrangement of the flowers on the axis.

infrastipular - below the stipules; in the case of *Rosa nutkana*, a pair of thorns at the base of the axils of main branches.

insectivorous - utilizes insects for food.

internode - the part of a stem between 2 adjacent nodes.

involucre - a set of bracts beneath an inflorescence; any set of structures which surrounds the base of another structure.

irregular flower - one in which the petals (less often the sepals) are dissimilar in form or orientation.

lanceolate - lance-shaped.

leaflet - one of the divisions of a compound leaf.

legume - the one-celled fruit of a leguminous plant, dehiscent along both sutures.

ligulate - tongue-shaped; provided with or resembling a ligule.

ligule - the strap-shaped part of a ray corolla in the *Asteraceae*; the thin collar-like appendage on the inside of the blade at the juction with the sheath, in grasses.

lip - a modified petal in the orchid flower, usually differing markedly in size, colouration, and form from the other two petals.

lobe - a projecting segment of an organ.

marginal - at the edge of the leaf blade.

nectariferous - nectar-bearing.

node - a place on the stem where a leaf is attached.

nut - a hard, dry, indehiscent, generally 1-seeded fruit.

nutlet - a small nut.

oblanceolate - lanceolate, with the broadest part toward the apex.

oblong - longer than broad, with the sides nearly parallel or somewhat curving.

obovate - the reverse of ovate, the terminal half broader than the basal.

obtuse - blunt, rounded.

operculum a little lid; the deciduous cap of a dehiscing fruit that has an encircling transverse line.

orbicular - circular in outline.

oval - broadly elliptic.

ovary - the part of the pistil that contains the ovules (young seeds).

ovate - egg-shaped, the broader end downward.

palatable - pleasant to the taste, agreeable.

palate - a raised part of the lower lip of a corolla, partly or wholly closing the throat.

palmate - with 3-more lobes or veins or leaflets or branches arising from a common point.

panicle - a branching inflorescence, with the younger flowers at the apex or centre.

papillae - short, rounded, blunt projections.

pappus - the modified calyx crowning the ovary of the *Asteraceae*.

peduncle - the stalk of an inflorescence or of a solitary flower.

pedunculate - borne on a peduncle.

perennial - a plant that lives more than 2 years.

perfect - referring to a flower that has both stamens and pistils.

perianth - the sepals and petals (or tepals) of a flower, collectively.

perichaetial leaves - the protective leafy mass surrounding the female reproductive structure in mosses or liverworts.

peristome - the apical opening of the moss capsule through which spores are shed, often ringed by peristome teeth.

persistent - remaining attached after the normal function has been completed.

petal - one of the divisions of the corolla, generally coloured or white serving to attract pollinators.

petiole - a leaf stalk.

pinnae - the primary divisions of a compound leaf.

pinnate - with 2 rows of lateral branches or appendages, or parts along an axis, like barbs on a feather.

pinnatifid - deeply cut in a pinnate fashion.

pinnipalmate - intermediate between pinnate and palmate, as the venation of some leaves in which the first pair lateral veins are much larger than the others.

pinnule - a division of pinna (singular form of pinnae);an ultimate leaflet of a leaf which is pinnately 2-more times compound.

pod - any kind of dry, dehiscent fruit.

pome - a fruit with a core like an apple.

prostrate - flat on the ground.

pubescent - bearing hairs of any sort.

raceme - an elongate flower-cluster with each flower pedicellate and the youngest flowers at the apex.

radiate - in the *Asteraceae*, having the marginal flowers of the head ligulate and the central ones tubular.

ray - the ligule or ligulate flowers in the *Asteraceae* one of the branches of an umbel.

receptacle - the portion of the floral axis on which the flower parts are borne; in the *Asteraceae*, the expanded end of the peduncle to which the flowers of the head are attached.

regular - referring to flowers in which the members of each circle of parts (or at least the sepals and petals) are similar in size, shape, and orientation.

resinous - containing or producing a sticky aromatic substance.

reticulate - forming a network, as the veins of a leaf.

retuse - with a small terminal notch in an otherwise rounded or blunt tip.

rhizoid - a structure of rootlike form and function, but of simple anatomy.

rhizomatous - bearing rhizomes.

rhizome - a creeping underground stem.

rhombic - a four-sided figure having its opposite sides equal, and its angles not right angles.

rootstock - same as a rhizome.

rosette - a cluster of leaves or other organs arranged in a circle or disk, often in a basal position.

samara - a dry, indehiscent, generally 1-seeded, winged fruit.

saprophytic - a plant which lives on dead organic matter, neither parasitic nor making its own food.

scape - a peduncle arising from the ground, naked or without proper foliage.

schizocarp - a fruit which splits into separate wedge-like segments at maturity.

sepal - a member of the outermost set of flower leaves, typically green or greenish and more or less leafy in texture.

seral - a successional species.

serrate - toothed along the margin with sharp, forward-pointing teeth.

serrulate - finely serrated.

sessile - without a stalk of any kind.

seta - a bristle, or the stalk of a bryophyte sporophyte.

sheath - an organ which partly or wholly surrounds another organ, as the sheath of a grass leaf, which surrounds the stem.

simple leaf - one with the blade all in 1 piece, not compound.

solitary - borne singly.

spadix - a spike with small, crowded flowers on a thickened, fleshy axis.

spathe - a large bract enclosing a spadix.

spike - a more or less elongate inflorescence of the racemose type, with sessile or subsessile flowers.

spikelet - a smaller or secondary spike, the ultimate flower cluster, especially in grasses and sedges.

sporangium (plural sporangia) - a structure containing spores.

sporophyll - a leaf (often more or less modified) which bears or subtends a sporangia.

sporophyte - the spore producing portion or generation of a plant.

spur - a hollow appendage of the corolla or calyx; a hollow, sacklike, conical, or slender projection of some part of a flower, usually nectariferous.

stamen - the male organ of a flower, consisting of anther and generally a filament.

stigma - the part of the pistil which is receptive to pollen.

stipe - the stalk beneath the ovary; the leaf stalk of a fern.

stipule - an appendage at the base of a petiole or leaf or on each side of its insertion.

stolon - an elongate creeping stem on the surface of the ground.

stononiferous - bearing stolons.

stoma (plural stomata) - breathing pore or aperture in the surface of leaves or green stems.

style - the slender stalk which typically connects the stigma(s) to the ovary.

subtend - to be directly below and close to, as a leaf subtends its axillary bud.

taproot - the primary descending root.

tendril - a slender, coiling or twining structure or organ, by which a climbing plant grasps its support.

terminal - at the tip, apex, or far end.

ternate - in 3's.

thallus - a plant body without the true roots, stems, or leaves.

tuber - a thickened part of a rhizome, generally at the end, serving in food storage and often in reproduction.

tubular - with the form of a tube.

umbel - an inflorescence, more or less flat-topped, in which all of the pedicels arise at the same point, like the ribs of an umbrella.

undulate - wavy.

vallecular - pertaining to the grooves between the ridges, as in the fruits of umbels.

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